Pacific Salmon Commission

2014/2015 Thirtieth Annual Report

Pacific Salmon Commission

Established by Treaty between Canada and the United States March 18, 1985 for the conservation, management and optimum production of Pacific salmon

Thirtieth Annual Report 2014/2015

Vancouver, B.C.
Canada

November 2016

PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA
AND THE UNITED STATES OF AMERICA
MARCH 18, 1985

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Letter of Transmittal

In compliance with Article II, Paragraph 14 of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific salmon (the Treaty), it is my pleasure as Executive Secretary of the Pacific Salmon Commission to present my compliments to the Parties and to transmit the Thirtieth Annual Report of the Commission.

This report summarizes the activities of the Commission for the fiscal year April 1, 2014 to March 31, 2015. It reports on the results of the 2014 fishing season and on meetings of the Commission and its subsidiary bodies. Also included are the annual reports of the Northern and Southern Fund Committees, and an independent auditor's report on financial activities of the Commission during the fiscal year April 1, 2014 to March 31, 2015.

Additional details about the Commission's activities and the Treaty are available at www.psc.org.

Sincerely,

John Field

Mr. John Field
Executive Secretary

PACIFIC SALMON COMMISSION

OFFICERS for 2014/2015

Chair	Ms. Susan Farlinger
Vice-Chair	Mr. W. Ron Allen

COMMISSIONERS

Canada	United States
Mr. John McCulloch	Mr. Phil Anderson
Mr. Murray Ned	Mr. Charles Swanton
Mr. Bob Rezansoff	Mr. Bob Turner
Dr. Brian Assu	Mr. William F. Auger
Ms. Rebecca Reid	Mr. Mike Clark
Dr. Brian E. Riddell	Mr. McCoy Oatman
Mr. Paul Sprout	

SECRETARIAT STAFF

Executive Secretary	Mr. John Field
Administrative Officer	Ms. Ilinca Manisali
Chief Biologist	Mr. Mike Lapointe

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INTRODUCTION

Since the early 20th century, Canada and the United States have discussed and collaborated on Pacific salmon conservation and management. Interception of Pacific salmon bound for rivers of one country in fisheries of the other has been a particularly important issue over the years. Scientific research identified a number of intercepting fisheries on species and stocks originating from Alaska, British Columbia, Washington, Oregon and Idaho. This research indicated that Alaskan fishers were catching some of the salmon bound for British Columbia, Idaho, Oregon and Washington. Canadian fishers off the West Coast of Vancouver Island were capturing some of the salmon bound for rivers of Washington and Oregon, while fishers in northern British Columbia were intercepting certain fish returning to Alaska, Washington, Oregon and Idaho. U.S. fishers were catching Fraser River salmon as they traveled through the Strait of Juan de Fuca and the San Juan Islands towards the Fraser River.

Cooperative management of stocks subject to interception became a matter of common concern to Canada and the United States, and governments desired a mechanism to enable each country to reap the benefits of its respective management and enhancement efforts. That mechanism is now provided through the Treaty Between the Government of Canada and the Government of the United States of American Concerning Pacific Salmon (hereafter the "Pacific Salmon Treaty" or "the Treaty"), which entered into force upon the exchange of instruments of ratification by the President of the United States of America and the Prime Minister of Canada on March 18, 1985.

The treaty, *inter alia*, established a) a bilateral fishery management organization known as the Pacific Salmon Commission (the Commission), and b) bilateral fishery management regimes for conservation and harvest sharing of salmon stocks. Each country (Party) retains jurisdictional management authority but must manage its fisheries in a manner consistent with the provisions of the Treaty. The Treaty is intended to enable bilateral conservation and enhancement to prevent overfishing, increase production, and ensure that each country receives benefits equivalent to its own salmon production. The Commission also serves as a forum for consultation between the Parties on their salmonid enhancement operations and research programs.

The Commission comprises four Commissioners (and alternates) from each country as the principle deliberative body. The Commission has also established numerous subsidiary committees, and four geographically oriented panels. The Panels report to the Commission and provide advice on the conservation and management of selected stocks of concern, with certain exceptions as noted below:

Transboundary Panel: stocks originating from the Alsek, Stikine and Taku River systems.

Northern Panel: stocks originating in rivers situated between Cape Suckling in Alaska and Cape Caution in British Columbia.

Southern Panel: stocks originating in rivers located south of Cape Caution, other than Fraser River sockeye and pink salmon.

Fraser River Panel: has special in-season regulatory responsibilities for stocks of sockeye and pink salmon originating from the Fraser River.

Yukon River Panel: makes recommendations to authorities in Alaska and the Canadian government concerning the conservation and coordinated management of salmon originating in the Yukon River in Canada, but does not report to the Commission.

The panels review annual post-season reports, annual pre-season fishing plans and ongoing and planned salmonid enhancement programs of each country. They also provide recommendations to the Commission for development of fishery regimes in accordance with the objectives of the Treaty. These regimes, once

adopted by the Commission and accepted by the Parties, are implemented by the relevant fishery management agencies in each country.

The Parties accord the Fraser River Panel special responsibility for in-season regulation of Fraser River sockeye and pink fisheries of Canada and the United States in southern British Columbia and northern Puget Sound, in an area designated as Fraser River Panel Area Waters. Scientific and technical work is conducted for the Panel by the Fishery Management Division of the Commission's Secretariat staff.

With long-term fishery arrangements in place through periodic amendment of the Treaty, the meeting agendas for the Commission have concentrated on implementation that will improve fisheries management and aid the countries' efforts to recover weakened stocks. These provisions include establishment of two bilaterally-managed restoration and enhancement funds, provisions to enhance bilateral cooperation, and improvements to the scientific basis for salmon management.

The Commission generally meets three times annually and conducts its business between meetings through its permanent Secretariat located in Vancouver, British Columbia. In the period April 1, 2014 to March 31, 2015, the Commission met on three occasions:

1. Fall Session
   October 22-23, 2014 – Vancouver, B.C.

2. Post-Season Meeting of the Commission and Panels
   January 12-16, 2015 – Vancouver, B.C.

3. Thirtieth Annual Meeting of the Commission
   February 9-12, 2015 – Portland, Oregon

This, the Thirtieth Annual Report of the Pacific Salmon Commission, provides a synopsis of the activities of the Commission and its subsidiary bodies during its Thirtieth fiscal year of operation, April 1, 2014 to March 31, 2015.

Activities of the Commission

PART I
ACTIVITIES OF THE COMMISSION

A. FALL SESSION OF THE PACIFIC SALMON COMMISSION
October 22-23, 2014, Vancouver, B.C.

The Commission held two bilateral sittings during the week.

The Commission conducted its annually scheduled review of the status of special issue committees. There were five special issue committees in existence:

1) The Fraser Strategic Review Committee was tasked with reviewing the technological, financial, and fishery management aspects of the PSC hydroacoustic program.

The Fraser River Panel and the Fraser Strategic Review Committee developed a set of seven questions directed towards the Fraser Panel that were focused on defining the hydroacoustic program's objectives, the critical pieces of information generated by the program, and determining how quickly hydroacoustic information was required by the Panel for it to be of use in the Panel's management of the Fraser River fishery.

The Commission agreed that the Fraser Strategic Review Committee would provide a preliminary report to the Commission at the February 2015 Annual Meeting and the final Committee report by October 2015.

2) The Bylaws Working Group was formed to recommend amendments to the PSC bylaws.

The Commission agreed to adopt the amendments to the Commission bylaws proposed by the Bylaw Working Group except for those below, which would be addressed by the Standing Committee on Finance and Administration before coming before the Commission for approval:

a. Chapter II, Section E(bis) re. privileges and immunities
b. Chapter X, Rule 23 re. staff promotions
c. Chapter X, Rule 44 re. severance pay

3) The Interim Advisory Committee was tasked with discussing issues and processes necessary to develop a PSC strategic plan.

The Interim Advisory Committee (IAC) agreed that a high level strategic plan would provide little value to the Commission and instead determined to develop a document focused on Commission priorities that included actions and deliverables that could provide value to the Commission process.

The Commission agreed that the Committee would make a final recommendation about the report at the January 2015 Commission session.

4) The Outreach and Transparency Working Group was formed to address three major goals: improving the PSC's public outreach and transparency, improving engagement with other regional fishery management organizations, and improving orientation for PSC delegates.

Executive Secretary Field presented the Commission with three products intended to provide orientation information for Commission delegates; one information package was directed to PSC delegates in general, the second was focused on providing guidance to Panel and Committee Chairs, and the third was

a presentation that Mr. Field would deliver on an annual basis to interested new PSC delegates at either the January or February Commission meeting.

The Commission adopted the report from the Outreach and Transparency Working Group with the understanding that a) there was no new assignment to develop social media outlets for the PSC, and any future work in social media would be approved by the Commission; b) Commissioners would have an opportunity to review the beta version of the redesigned PSC website and it would be discussed by the Commission ahead of public release; and c) the future of the Working Group would be discussed at the January 2015 meeting.

5) The Chinook Review Committee (CRC) on Joint Fund Committee Priorities was formed to assist the Commission and the Endowment Fund Committees to prioritize chinook assessment programs that could potentially be funded through the PSC Endowment Funds.

The Commission received a report from Committee members entitled "Recommendations for very high priority Chinook proposals by the Joint Fund Committees." In the report, the CRC ranked all eligible projects on a scale of 1 to 10 based on various criteria such as technical feasibility, availability of other funding, and applicability to treaty implementation.

The Commission accepted the recommendations of the Chinook Review Committee.

The Parties developed and agreed upon language charging the Panels and Committees about how to proceed regarding meeting schedules for 2015 taking into consideration strategies and timelines for 2016 – 2018 negotiations.

The Commission discussed the status of the Habitat and Restoration Technical Committee (HRTC) and the exchange of correspondence between the Parties about habitat work conducted on both sides of the border.

The Commission agreed that Attachment E to the diplomatic notes dated June 30, 1999 regarding habitat and restoration was adequately met by both Parties' demonstrated commitments to habitat and restoration consistent with the Treaty. The Commission would consult on next steps regarding Attachment E in January 2017.

The Commission discussed the Canadian management approach to Fraser River Coho and agreed to revisit the topic at the January 2015 meeting.

The Commission discussed and approved annual work plans submitted by the Southern Panel, Chinook Technical Committee, Coho Technical Committee, Chum Technical Committee, Northern Panel, Northern Boundary Technical Committee, Transboundary Panel, Transboundary Technical Committee, Fraser River Panel, Fraser River Technical Committee, Selective Fishery Evaluation Committee, Data Sharing Technical Committee, Committee on Scientific Cooperation, Sentinel Stocks Committee and the Coded Wire Tag Implementation Team.

The Commission adopted the slate of PSC officers for 2014/2015.

B. MEETING OF THE COMMISSION AND PANELS
January 12-16, 2015, Vancouver, B.C.

The Commission met in three bilateral sittings during the meeting.

Mr. Charlie Swanton, the newly appointed U.S. Commissioner from the State of Alaska, was welcomed to the Commission table.

PSC Endowment Fund Coordinator Mr. Angus MacKay, who was leading the PSC website redesign project, delivered a presentation about the website redesign process.

The Commission agreed that because the website redesign process was progressing and because the Commission approved new orientation materials at the Commission Fall 2014 meeting, that the Outreach and Transparency Working Group had fulfilled its mandate and was dissolved.

The Parties exchanged their 2014 post-season fishing reports.

In response to issues raised by members of the Selective Fishery Evaluation Committee, the Commission discussed concerns about the completeness, format, and timeliness of information about selective fisheries included in the post-season reports.

The Commission agreed that each Party would examine the data needs and format requests submitted by the Selective Evaluation Fishery Committee, the relevant mandates of the Treaty, and the national capacity to provide the requested types of data and would revisit the topic at the February 2015 Annual Meeting.

The Commission received a report from the Standing Committee on Finance and Administration, which had met to discuss the Secretariat's 2015/2016 operating budget, a number of proposed bylaw revisions, and issues surrounding test fishing. The Committee would continue to discuss these topics and would present a report for Commission approval at the February 2015 Commission meeting.

The Interim Advisory Committee (IAC) presented its final report entitled "Priorities and Guidance: Supporting Effective Treaty Implementation". The document outlined five primary priority and action categories and a schedule of deliverables for each category.

The Commission agreed that the final report of the Interim Advisory Committee provided useful guidance for future Commission business and the IAC was dissolved.
The Commission received a progress report from the Sentinel Stocks Committee, which summarized significant accomplishments achieved in all five geographical areas as a result of work done under the Sentinel Stocks Program (SSP). The Committee asked for and received approval from the Commission to meet to finalize a report that would summarize the key findings and insights for each project funded under Sentinel Stocks Program.

The Chinook Technical Committee Co-Chairs presented a memo about the CTC's response to the Commission's request for the initial scoping of issues pertaining to the renegotiation of Annex IV, Chapter 3.

The Commission agreed that in February, it would further discuss and clarify the role that the Chinook Interface Group (CIG) would have in the upcoming Treaty negotiations.

The Commission discussed a memo written by the CTC Co-Chairs asking the Commission for clarification about the CTC's five-year review assignment.

The Commission agreed that the Chinook Interface Group would meet with the Chinook Technical Committee in February 2015 regarding the Chapter 3 five-year review to work to ensure that the review contained the high-priority information needed to inform the renegotiation process, with the understanding that Tasks 1 and 2 of the current CTC work plan remained the CTC's top priorities.

The United States presented a letter to Canada formalizing its concerns about the management of Fraser River coho in 2014. The Commission agreed to discuss these concerns at the February 2015 meeting.

Upon the recommendation of the Fraser Strategic Review Committee, the Commission accepted the recommendations contained in the "Summary of Recommendations from the Fraser River Panel for the Fraser Strategic Review Committee: Next steps/Decisions" developed by the Chair and Vice-Chair of the Fraser River Panel.

The Commission received progress reports on work plans from the Transboundary Panel, Southern Panel, Northern Panel, and the Committee on Scientific Cooperation.

C. PACIFIC SALMON COMMISSION ANNUAL MEETING
February 9-16, 2015, Portland, Oregon

The Commission met twice in bilateral session during the meeting period.

The Commission discussed and adopted instructions issued to Panels and Committees about Annex IV renegotiations that were agreed upon at the 2014 Fall Meeting, and updated and clarified subsequent to the January 2015 Commission meeting.

The Commission discussed issues surrounding how the Parties could best provide data requested by the Selective Fishery Evaluation Committee (SFEC) that would allow SFEC to conduct its analysis of the impacts of Mark Selective Fishing and Mass Marking on the Coded Wire Tag (CWT) System on a timely basis.

The Commission agreed to encourage relevant Canadian and U.S. personnel to communicate, as appropriate, on possible ways to improve Mark Selective Fishery data submission. Each national section would report on the issue to the Commission at the October 2015 Fall Meeting.

The Commission agreed that each National Section would designate members to serve on a Chinook negotiation team and, ahead of the 2015 Fall Meeting, would exchange initial lists of issues for amendment of Annex IV, Chapter 3.

The Commission discussed and approved the "Proposed Commission timeline and process for communicating 2016 very high priority Chinook projects to the Joint Fund Committee" dated February 11, 2015.

The Commission adopted the Chinook Interface Group's recommendation that at its April 2015 meeting, the Chinook Technical Committee would review a draft of the "Annex IV Chapter 3 Performance Evaluation" outline dated February 11, 2015, and would recommend a plan for executing the review to the Commission Chair and Vice-Chair intersessionally.

The Commission discussed the Chinook Interface Group terms of reference, which were last revised in 2009. The Commission agreed that the Chinook Interface Group would review its terms of reference and recommend changes to reflect current practice for Commission approval.

Contractors Mr. Will Satterthwaite and Mr. Cameron Speir of NOAA's Southwest Center delivered a preliminary report about a study they were conducting to analyze Parentage-Based and Coded-Wire Tagging assessment methods. The study was supported by the PSC Endowment Fund Committees.

Coded Wire Tag Improvement Team Co-Chairs Dr. Arlene Tompkins and Mr. Scott McPherson delivered the final CWTIT report entitled "5 Year Synthesis Report of CWTIP (Coded Wire Tag Improvement Program)".

Mr. Angus Mackay, Restoration and Enhancement Fund Manager, delivered the "Annual Report of the Southern Boundary Restoration and Enhancement Fund and the Northern Boundary and Transboundary Rivers Restoration and Enhancement Fund for the year 2014."

The Commission received and adopted the annual report of the Standing Committee on Finance and Administration, which included a recommended 2015/2016 Secretariat operating budget, by-law amendments, and recommendations to finalize the Commission's approach on a number of issues including a financial reporting change, PSC Secretariat staff reorganization, and the Secretariat's administration of test-fishing operations.

The Commission received a report about the Fraser Strategic Review Committee (FSRC) process, which included the Fraser River Panel's development of a detailed work plan to compare the hydroacoustic sites at Mission and Qualark that was prepared subsequent to the January 2015 Commission meeting. The plan included a description of 14 tasks, an indication of who would lead and support the work on each task, and the expected timeline by which the tasks would be completed.

The Commission adopted the work plan as presented. An interim report would be due in October 2015 and the Committee's final report would be presented in October 2016.

The Commission discussed an exchange of correspondence between the United States and Canada regarding Fraser River Coho management. It was agreed that Canada would respond to the issues raised by the United States in more detail through a further exchange of correspondence.

The Commission received progress reports on work plans from the Southern Panel, Fraser River Panel, Transboundary Panel, Committee on Scientific Cooperation, and Selective Fishery Evaluation Committee.

In response to a question from the Southern Panel, the Parties agreed to discuss the responsibility for reporting on salmon enhancement activities at a future bilateral Commission session, after they had the opportunity to discuss the topic in their respective national sections.

The Commission presented former U.S. Commissioner Mr. Roy Elicker with a plaque commemorating his years of service to the Pacific Salmon Commission.

Activities of the Standing Committees

PART II
ACTIVITIES OF THE STANDING COMMITTEES

A. MEETINGS OF THE STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

The Standing Committee on Finance and Administration met on several occasions in December 2013 and the 2014 Post-Season and Annual Meetings. The Committee addressed a number of issues and made recommendations for the Commission's consideration as noted below.

Budget proposal for FY2014/2015 and forecast for FY2015/2016

The Committee discussed the financial challenges facing the Commission and the Secretariat over the coming years. The Secretariat has worked with the Committee to constrain expenditures and find efficiencies in operations to yield a surplus in the coming fiscal year and a forecast balanced budget in FY2015/2016.

Accordingly, the Committee recommends that the Commission adopt the proposed budget for FY2014/2015 as shown in Appendix D. The forecast budget for FY2015/2016 in Table 1 requires no action from the Commission at this time, and is provided for information purposes. The Committee highlights the following aspects of the FY2014/2015 proposal:

1. DIDSON lease costs: The Secretariat currently owns three DIDSON units that are deployed at the Mission hydroacoustic site. In an effort to improve the precision of sockeye passage estimates during the 2014 Adams return, the Secretariat plans to deploy a fourth DIDSON at the site and sample a greater portion of the river. A fifth unit will be needed as a backup. Given the ongoing Fraser River Strategic Review and the development of new ARIS hydroacoustic technology, the Secretariat will lease (rather than purchase) two extra DIDSON units for the 2014 season. Costs will be covered in the ordinary budget, but searches will continue for loaned equipment to reduce expenses.

2. Transfer of selected expenses: The FY2014/2015 proposal and FY2015/2016 forecast are predicated on two assumptions: 1) certain Secretariat proposals to the Southern Fund Committee for 2014 will be successful and liberate $22,500 from the ordinary budget; and 2) more than $20,000 in test fishing sampling costs will be transferred from the ordinary budget to the test fishing budget and covered by the sale of harvested fish in each of the two fiscal years (see below).

3. Pension liability: Preliminary actuarial estimates indicate that the Commission pension plan's unfunded liability will increase by $48,000 - $156,000 per year beginning January 1, 2015. The actual liability will be determined in April 2014, and must be paid from Commission funds in 2015. While specific payments won't be known until April, the Secretariat has cash reserves on hand to pay the expected liability in the last three months of FY2014/2015 (January – March 2015) and all or nearly all of the FY2015/2016 liability. See below for information on the pension liability after 2016.

Test fisheries

The Committee endorsed the Canadian proposal to repeat the Secretariat's administration of various test fisheries for an additional year in 2014 under the same conditions as 2013 and noting that non-Fraser Panel approved test fisheries will not affect Panel-approved test fisheries. After the fishing season concludes, the

Secretariat will consult with Canadian personnel and prepare an evaluation of the 2014 operations. This Committee will review this report in December 2014, and by February 2015 identify long-term test fishing policy issues for the Commission to address.

As noted above, the budget proposal and forecast assume the following costs will be transferred from the ordinary budget to the test fishing program and its revenues since these costs are directly related to test fishing operations:

- 2014: $10,842 in temporary salary costs for test fishing samplers, and $14,655 freight costs related to transportation and delivery of samples (total $25,497)
- 2015: $9,620 temporary salary costs; $13,429 freight (total $23,049, pending a final test fishing plan for 2015)

Ongoing pension liability

The Committee notes that the Commission could incur an additional pension liability of $48,000 - $156,000 per year, at least from 2015 to 2018 (when the next valuation determines new liability payments). Canada has stated that it does not expect contributions to increase and understands the costs of these liabilities for current staff are considered within national contributions. The United States has expressed concern over this position, and the Committee draws the Commission's attention to this significant funding issue that will affect budget forecasts in the next meeting cycle and potential operational capacity.

B. MEETINGS OF THE STANDING COMMITTEE ON SCIENTIFIC COOPERATION

During the reporting period the Committee on Scientific Cooperation (CSC) oversaw the development of a study on parental-based tagging, a technique that could potentially replace or supplement the Coded Wire Tag (CWT) program.

Interest in parentage-based-tagging was traced back to the Commission's 2005 CWT review, in which the CWT Expert Panel examined parentage-based tagging and other genetic techniques as potential tools to augment or to replace the CWT system. In 2005 parentage-based tagging was not a cost-effective option. However, in 2005 the CWT Expert Panel recommended that the technique be looked at again as technology improved and costs declined.

The CSC subsequently developed a multi-disciplinary plan to evaluate the use of parentage-based tagging for the management of Pacific salmon. The Committee formed an oversight committee that included PSC technical committee members. A consortium of eight people was awarded the contract to conduct the study, which was funded by the Endowment Fund Committees.

The consortium presented a preliminary report of findings in January 2015 and was scheduled to deliver its final report to the oversight committee on April 1, 2015. The oversight committee and the CSC were scheduled to deliver their responses about the report to the Commission in July 2015.

During the reporting period the CSC also supported a workshop on Bayesian Statistics directed toward PSC technical Committee members, conducted by Dr. Catherine Michielsens, the Head of PSC Stock Assessment, which was held September 1 – 3, 2014 in Seattle.

C. MEETINGS OF THE NORTHERN AND SOUTHERN FUND COMMITTEES

The Northern and Southern Fund Committees have agreed that given the congruent nature of their agendas and their decision to combine the funds into a single master account for investment management purposes, and the

efficiencies involved with respect to interaction with the fund managers, it was appropriate to meet together as a Joint Fund Committee at least once a year for an annual financial review and investment manager interviews. The Joint Fund Committee met in person twice in fiscal year 2014/15, firstly on April 16th and secondly on October 28th in the afternoon only, and for the day on October 29th, 2014.

At the April meeting the Fund Committees Ms. Kamila Geisbrecht of Aon Hewitt presented on a number of investment related agenda items. Ms. Geisbrecht is now the Aon Hewitt lead on the Fund's portfolio, taking over that role from Mr. Chris Kautzky after an eight-year term (since Nov 2005).

Ms. Geisbrecht began the morning with an educational review of the investment strategy building process with a focus on asset mix, implementation, rebalancing and monitoring. The Committee then received the fourth Quarter 2013 report which showed that the Fund had exceeded the benchmark for the quarter and for the year, but had only matched the benchmark for the previous four years. The next agenda item was a review of potential questions developed by Ms. Geisbrecht that could be posed to the Fund's investment managers at the annual meeting in October. This item was in response to the Committee's desire to move the annual investment manager interviews onto a more proactive footing, with the managers being required to answer specific questions rather than providing their own typical presentations. The Committees were satisfied with the work Ms. Geisbrecht had done and instructed her to brief the investment managers on the new format they would be required to follow in the Fall. Lastly Ms. Geisbrecht gave a review of the performance of Brandes Investment Partners, the Fund's global equities manager. The Committees have been concerned with the performance of Brandes since the credit crisis of 2008/09.

The next agenda item was a review and discussion of the letter of guidance to the Funds from the PSC Commissioners received earlier in April. After considerable deliberation, the Joint Fund Committee agreed to respond to the Commissioners guidance as an important facet of treaty implementation through 2018. Members committed to finance the priority projects identified over the next four years within the bounds of their financial obligations and conservation priorities for other salmon species.

The Committees then received a presentation on Fund's audited financial statements and administration costs for the following year from PSC Secretariat Controller, Ms. Ilinca Manisali. The Committees approved the administration budgets as presented.

Mr. John Field gave a presentation on the Secretariat's server upgrades and SharePoint deployment. The Fund Committees approved a proposal to award a second grant in support of this initiative in the amount of $85,000 to be divided equally between the two Funds.

Mr. Angus Mackay responded to an action item that arose during the Northern Fund Committee's meeting in January 2014 and provided a memorandum on Fund communications and website development. The Fund Committees approved grants in the amount of $35,000 for website redevelopment and $10,000 for an evening Fund presentation and reception to follow scheduled for the January 2015 meeting of the Commission in Vancouver.

On the afternoon of October 28th, the Fund Committees met in joint session to discuss the very high priority chinook projects identified by the Commissioners in April and subsequently reviewed and prioritized by the Chinook Review Committee (CRC) earlier in October. Noting the financial obligations and constraints particularly for the Southern Fund, the Fund Committee members agreed to fund priority projects #1 through #6 in the CRC's report for an amount up to $1.2M US with the grants to be awarded in early 2015.

On the following day, October 29th, at the annual investment manager review meeting, Ms. Kamila Geisbrecht of Aon Hewitt presented the second Quarter report for 2014. Over the past year, the Fund had out-performed the benchmark on a gross and net of fees basis. Outperformance was attributed to both asset

allocation (underweighting Universe Bonds) and security selection (outperformance of the Global and International Equity managers versus their benchmarks).

The Committee then received the in-person presentations from LSV, RARE, Invesco and Brandes. Of the four active managers, only Invesco appeared to have made a concerted effort to conform to the format approved by the Committees and Aon Hewitt of responding to set questions they had been provided with earlier. The other managers responded more or less to the questions, but largely stuck to the traditional presentation booklet format. For a first attempt at changing the procedure of the investment manager interview meetings, it was deemed a partial success that would be improved upon next year. Ultimately the Committees were content to maintain the manager status quo for the present and review performance again with Ms. Geisbrecht at the Spring 2015 Joint Fund Committee meeting.

Northern Fund Committee Meetings

The Northern Fund Committee met three times during fiscal year 2014/15.

April 17th, 2014

- Potential for a Call for Proposals for 2015.
- Fund financial obligations in 2015.
- Commissioner's guidance on very high priority Chapter 3 chinook projects
- Timetable.

September 25th, 2014

- First round selection of project concepts to be invited to proceed to Stage Two detailed proposals.
- First round selection of project concepts to be invited to proceed to stage two. Meeting held in Vancouver, BC.

February 17th, 2015

- Final selection of projects for funding in 2015. This meeting was held at the Listel Hotel in Vancouver.

Southern Fund Committee Meetings

The Southern Fund Committee met three times during fiscal year 2014/15.

April 15th, 2014

- Potential for a Call for Proposals for 2014.
- Fund financial obligations in 2014.
- Southern and Fraser River Panel input.
- Commissioner's guidance on very high priority Chapter 3 chinook projects
- Timetable.

September 29th, 2014.

- First round selection of project concepts to be invited to proceed to Stage Two detailed proposals.

February 12th, 2015

- Final selection of projects for funding in 2015. This meeting was held at the Embassy Suites Hotel in Portland.

A list of all 2014/15 Northern and Southern Fund projects can be found in Appendices A and B.

Activities of the Panels

PART III
ACTIVITIES OF THE PANELS

A. FRASER RIVER PANEL

At the January meeting the Panel received reports reviewing the 2014 fishing season, finalized Total Allowable Catch (TAC) calculations and received instructions from the Fraser River Strategic Review Committee on the review of the hydroacoustics programs at Mission and Qualark. A presentation was also made on the effects of capture release on Early Stuart sockeye. At the February meeting the Panel received reports from Canada on 2014 escapements and 2015 pre-season forecasts for Fraser River sockeye and pink salmon returns. Additional reports were provided regarding Washington sockeye and pink salmon pre-season forecast and historical returns, Management adjustment models, pink salmon population trends in Washington, and a few topics related to test fishing issues.

B. NORTHERN PANEL

No report was received by the time of publication.

C. SOUTHERN PANEL

No report was received by the time of publication.

D. TRANSBOUNDARY PANEL

No report was received by the time of publication.

Review of 2014 Fisheries and Treaty-Related Performance

PART IV
REVIEW OF 2014 FISHERIES AND TREATY-RELATED PERFORMANCE

The following review has been drawn from a number of reports prepared by Commission staff, joint technical committees, and domestic agencies for presentation to the Commission. Source documents are referenced for each part of this review. All figures are preliminary and will be updated in future reports as more complete tabulations become available.

A. FRASER RIVER SOCKEYE SALMON

Pre-season Planning

1. Expectations were for a median run size (p50 level) of 22,854,000 Fraser River sockeye salmon.

2. Expectations of migration parameters included a 66% diversion rate for Fraser River sockeye salmon through Johnstone Strait, except for Harrison sockeye for which a 36% diversion rate was assumed. Expected Area 20 50% migration dates used for pre-season planning were July 4 for Early Stuart, August 4 for Early Summer, August 10 for Summer-run and August 18 for Late-run sockeye. On July 10, Canada provided the Panel with revised predictions of a diversion rate (56%) and migration timing (July 7 for Early Stuart, August 9 for Early Summer, August 14 for Summer and August 22 for Late-run sockeye).

3. Pre-season spawning escapement goals were 120,000 Early Stuart, 1,444,000 Early Summer-run, 1,995,000 Summer-run and 4,455,000 Late-run sockeye for a total of 8,014,000 adult spawners. The goals for each sockeye management group were established by applying Canada's Spawning Escapement Plan to the forecasted run sizes. For pre-season planning purposes, Early Stuart was constraint by a 10% low abundance exploitation rate (LAER).

4. Management Adjustments (MAs) of 79,000 Early Stuart, 607,000 Early Summer and 219,000 Summer-run sockeye were added to the spawning escapement targets to increase the likelihood of achieving the targets. These MAs were based on relationships between river conditions (discharge and temperature) and historical differences between lower and upriver escapement estimates. The Early Summer-run aggregate MA was the weighted average of the forecasted pMA for the non-Pitt, non-Chilliwack Early Summer-run component using only dominant and sub-dominant Early South Thompson years and fixed pMAs for Chilliwack and Pitt, using p50 forecast abundances. The MA for the total Summer-run was calculated from a weighted average of a fixed Harrison pMA and the forecasted pMA for the non-Harrison Summer-run component.

5. For Late-run sockeye, the Panel assumed a continuation of early upstream migration behavior and associated high mortality that has occurred since 1996. For pre-season planning, the Panel adopted a Late-run MA of 1,248,000 fish based on a weighted average of a fixed Birkenhead pMA and a cycle-line median pMA for Late-runs (excluding Birkenhead) since 1998 using the p50 forecast level of abundances.

6. The projected Total Allowable Catch (TAC) of Fraser River sockeye salmon based on the median forecasted abundances and agreed deductions was 12,119,000 sockeye, of which 16.5% (2,000,000 sockeye) were allocated to the United States (U.S.).

7. Pre-season model runs indicated it was unlikely the Summer-run TAC could be fully harvested due to fisheries constraints required to achieve spawning escapement targets for co-migrating Early Summer-run stocks while the harvest of Late-run stocks in turn was constrained by less abundant co-migrating Summer-run stocks.

8. The Panel adopted the 2014 Principles and Constraints and the 2014 Regulations.

In-season Management Considerations

9. Compared to the pre-season expectations used for planning, the observed marine migration timing was 5 days later for Early Stuart sockeye, 4 days earlier for Early Summer-run stocks, 9 days later for Summer-run and 7 days later for Late-run stocks.

10. The overall Johnstone Strait diversion rate for Fraser sockeye was 96%, compared to 56% forecasted pre-season.

11. The total return of Fraser sockeye was close to the median pre-season forecast.

12. River temperatures were warmer than average throughout July and August and flow levels were lower than average. As a result, the Management Adjustment (MA) models projected higher MA values than were adopted pre-season. The Fraser River Panel adopted the model predicted MA of 212,000 for Early Stuart, but decided to remain at pre-season adopted values for the Early Summer and Summer run, given favorable in-season observations of fish condition. In-season estimates of Late-run sockeye delay in the Gulf were substantially larger than estimated pre-season, resulting in a reduced Late-run MA of 416,000 sockeye.

Run Size, Catch and Escapement

13. The in-season estimate of 21,034,000 adult Fraser sockeye was revised post-season to 19,156,000 fish, 32% lower than the brood year abundance of 28,253,000 adults in 2010. Divided into management groups, adult returns totalled 222,000 Early Stuart, 1,868,000 Early Summer-run, 8,164,000 Summer-run and 8,902,000 Late-run sockeye. These Early Summer-run returns were less than half the forecast while Summer-run returns exceeded the forecast by almost 50%.

14. Catches of Fraser River sockeye salmon in all fisheries totalled 11,159,000 fish, including 10,123,000 fish caught by Canada, 887,000 fish caught by the U.S. and 149,000 fish caught by test fisheries. Most of the Canadian catch occurred in commercial fisheries (7,989,000 fish), followed by First Nations (1,777,000 fish) and recreational fisheries (353,000). In Washington, commercial catches totalled 698,000 Fraser sockeye, mostly caught in Treaty Indian fisheries (470,000 fish). In 2014, 21% (186,000 fish) of the U.S. catch of Fraser sockeye was caught in Alaska. The overall harvest rate was 58% of the run, which is the largest harvest rate observed since 1997.

15. DFO's near-final estimates of spawning escapement to streams in the Fraser River watershed totalled 5,877,000 adult sockeye. This was about 55% lower than the brood year escapement of 13,131,000 adults. Spawning escapements for all management groups, except Late run, where above average for this cycle while the Late-run escapement was 12% below the cycle average. There were 3,067,000 effective female spawners in the Fraser watershed, representing an overall spawning success of 95.6%.

16. Preliminary estimates of Run-size Adjustments (RSAs) are 127,000 Early Stuart, 384,000 Early Summer-run, 639,000 Summer-run and 969,000 Late-run sockeye, for a total of 2,119,000 Fraser sockeye.

Achievement of Objectives

17. In order of descending priority, the goals of the Panel are to achieve the targets for spawning escapement, international sharing of the TAC and domestic catch allocation.

18. In-season management decisions are based on targets for spawning escapement, which are represented in-season by potential spawning escapement targets (i.e., spawning escapement targets plus MAs). In-season estimates of potential escapement (i.e., Mission escapement minus catch above Mission) were close to the targets for Early Stuart (11% under), Early Summer-run (9% over), Summer-run (11% over) and Late-run sockeye (12% over).

19. Post-season spawning ground estimates of Fraser sockeye abundance totalled 5,877,000 adults, which is 13% below the post-season target. Spawner abundance was below the target for Early Stuart (36% under) and Late-run sockeye (26% under), and on target for Early Summer and Summer-run stocks. The preliminary estimate of the Early Stuart exploitation rate was 12%, slightly above the maximum allowable value of 10%.

20. The TAC (Total Allowable Catch) of Fraser sockeye was 11,235,000 fish, based on the calculation method set out in Annex IV, Chapter 4 of the Pacific Salmon Treaty. The Washington catch of 702,000 Fraser sockeye (excluding 186,000 Alaska catch) was 1,152,000 fish less than their 16.5% share. This was mainly due to the extremely high diversion rate (96%) which made most of the sockeye run inaccessible to U.S. fisheries. The total Canadian catch of 10,123,000 Fraser sockeye (excluding 600 ESSR catch) exceeded the Canadian in-season catch goal (83.5% of TAC + 400,000 fish AFE) by 342,000 fish. In these calculations, the TAC is fixed on the date that Panel control of the last U.S. Panel Area was relinquished (October 4 in 2014), while catches are post-season estimates.

21. In terms of domestic allocation objectives for Fraser sockeye, Treaty Indian fishers and All Citizen fishers were respectively 781,000 and 371,000 fish under their shares of the U.S. TAC. With respect to catch allocation within Canada's commercial fleet, Area B purse seiners were 970,000 fish over, Area D gillnets were 404,000 fish under, Area E gillnets were 473,000 fish under, Area F trollers were 40,000 fish over, Area G trollers were 5,000 fish under and Area H trollers were 129,000 fish under their allocations.

22. By-catches of non-Fraser sockeye and pink salmon in commercial net fisheries regulated by the Fraser River Panel totalled 670 sockeye and 740 pink salmon. Catches of other Fraser and non-Fraser salmon species include 14,400 chinook, 3,200 coho, 3,100 chum and 10 steelhead.

Allocation Status

23. There are no paybacks of Fraser River sockeye to carry forward to 2015 as the U.S. caught less than their share in 2014.

B. 2014 POST-SEASON REPORT FOR UNITED STATES SALMON FISHERIES OF RELEVANCE TO THE PACIFIC SALMON COMMISSION

Northern Boundary Area Fisheries

District 104 Purse Seine Fishery

The 2009 Pacific Salmon Treaty (PST) Agreement calls for abundance based management of the District 104 purse seine fishery. The agreement allows the District 104 purse seine fishery to harvest 2.45 percent of the Annual Allowable Harvest (AAH) of Nass and Skeena sockeye salmon prior to Alaska Department of Fish and Game (ADFG) statistical week 31 (referred to as the treaty period). The AAH is calculated as the total run of Nass and Skeena sockeye salmon minus either the escapement requirement of 1.1 million (200,000 Nass and 900,000 Skeena) or the actual in-river escapement, whichever is less.

The District 104 purse seine fishery opens by regulation on the first Sunday in July. In 2014, the initial opening was July 6 (week 28). The pre-week 31 fishing plan for District 104 was based on the preseason Canadian Department of Fisheries and Oceans (DFO) forecast returns of approximately 2,942,000 Nass and Skeena sockeye salmon. In the 2014 Treaty period (Alaska statistical weeks 28-30), 115,015 sockeye were harvested during one 15-hour opening in Week 28; one 15-hour opening in Week 29, and two 15-hour openings in week 30 (Table 1). A total of 101 purse seine vessels fished at some time in the district during the Treaty period. In past years 60% to 80% of Treaty-period sockeye salmon have been of Nass and Skeena origin, therefore we would anticipate between 69,000 and 92,000 Nass and Skeena sockeye may have been harvested in the District 104 purse seine fishery during the 2014 Treaty period. The final number of Nass and Skeena sockeye salmon harvested, and the actual catch by stock, will not be available until catch, escapement, and stock composition estimates are finalized for the year.

In 2014, a total of 10,873,380 pink salmon, 702,481 sockeye salmon, 169,125 chum salmon, 142,022 coho salmon, and 10,919 Chinook salmon were harvested in the District 104 purse seine fishery (Table 1). The number of days that the fishery was open was near the treaty period (1985-2013) average (Figure 1) and the number of boats fishing was also near average throughout the season (Figure 2). Chinook salmon catches in the District 104 purse seine fishery were above average throughout the season (Figure 3). Sockeye salmon catches were above average throughout the season (Figure 4) and the treaty period (week 28-30) catch of 115,015 was just above the 1985–2013 average. The total sockeye salmon catch of 702,481 was well above the 1985–2013 average of 474,000 fish. Catches of coho salmon were also above average in most weeks (Figures 5) and the overall harvest was 121% of the long-term average. Pink salmon catches were well above average through early August and dropped below average for the remaining weeks of the fishery (Figure 6). Chum salmon catches were above average early in the season, but were below average after week 30 (Figure 7).

Since the Pacific Salmon Treaty was signed in 1985, the number of hours open, boats fishing and boat-days fished in the pre-Week 31 annex period in District 104 are down 55%, 61% and 84% respectively compared to the averages in the pre-treaty 1980-1984 period (Table 2). The total pre-week 31 Treaty-period sockeye salmon harvest is also down 46%. The seine fleet moves freely between districts as various species are harvested, so seining opportunities elsewhere affect the effort and catch in District 104.

Table 1. Catch and effort in the Alaska District 104 purse seine fishery, 2014

Week/ Opening	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
28	7/6	337	21,410	14,123	145,638	23,322	31	15
29	7/13	705	31,860	10,997	506,965	38,924	75	15
30	7/20	724	29,000	10,006	478,873	17,448	63	15
30B	7/24	849	32,745	5,437	401,927	9,816	58	15
31	7/27	846	32,235	7,716	714,835	14,427	51	39
31B	7/31	1,468	105,499	10,476	1,763,580	12,541	81	39
32	8/4	1,941	126,775	17,014	2,517,904	16,358	89	39
32B	8/8	1,574	81,497	10,660	1,858,253	7,262	85	39
33	8/12	780	64,103	16,297	1,432,325	8,607	88	39
33B	8/16	408	46,330	11,649	593,546	5,829	40	39
34	8/20	788	83,525	13,570	341,468	8,179	55	39
35	8/24	411	41,498	11,603	105,203	4,674	57	39
35B	8/28	88	6,004	2,474	12,863	1,738	18	15
							Permits Fished	
Weeks 27-30		2,615	115,015	40,563	1,533,403	89,510	101	60
Weeks 31-36		8,304	587,466	101,459	9,339,977	79,615	128	327
Total		10,919	702,481	142,022	10,873,380	169,125	149	387

Table 2. Fishing opportunity, effort, and sockeye salmon harvest prior to week 31 in the District 104 purse seine fishery, 1980-2014.

Year	Hours Fished	Permits Fished	Fraction Days Fished (1d=15hrs)	Boat-Days Fished (Boats and Fraction Days)	Sockeye Harvest	Sockeye Catch per Boat-Day
1980	207	244	13.8	2,877	266,273	93
1981	132	212	8.8	1,108	185,188	167
1982	117	255	7.8	1,435	213,150	149
1983	108	241	7.2	1,211	170,306	141
1984	132	174	8.8	805	103,319	128
1985	84	141	5.6	502	100,590	200
1986	108	194	7.2	968	91,320	94
1987	90	134	6	457	72,385	158
1988	108	210	7.2	994	248,789	250
1989	84	135	5.6	438	157,566	360
1990	42	171	2.8	276	169,943	615
1991	41	134	2.7	243	98,583	406
1992	29	108	1.9	142	79,643	561
1993	45	171	3	343	163,189	476
1994	55	84	3.7	202	158,524	783
1995	58	109	3.9	218	71,376	328
1996	31	113	2.1	128	215,144	1,684
1997	56	159	3.7	409	572,942	1,402
1998	32	78	2.1	89	17,394	196
1999	30	38	2	44	7,664	174
2000	81	66	5.4	192	48,969	255
2001	50	95	3.3	182	203,090	1,115
2002	72	44	4.8	124	26,554	215
2003	52	40	3.5	97	84,742	875
2004	107	24	7.1	102	30,758	302
2005	68	38	4.5	93	35,690	382
2006	95	39	6.3	117	89,615	766
2007	50	68	3.3	136	112,135	824
2008	33	17	2.2	22	6,262	281
2009	72	38	4.8	95	15,971	168
2010	55	21	3.7	39	4,617	118
2011	84	29	5.6	77	25,280	329
2012	75	30	5.0	93	18,300	196
2013	46	36	3.1	59	13,102	222
2014	60	101	4.0	260	115,015	442
Avg. 80–84	139	225	9	1,487	187,647	136
Avg. 85–14	63	89	4	238	101,838	473
% Change	-55%	-61%	-55%	-84%	-46%	249%

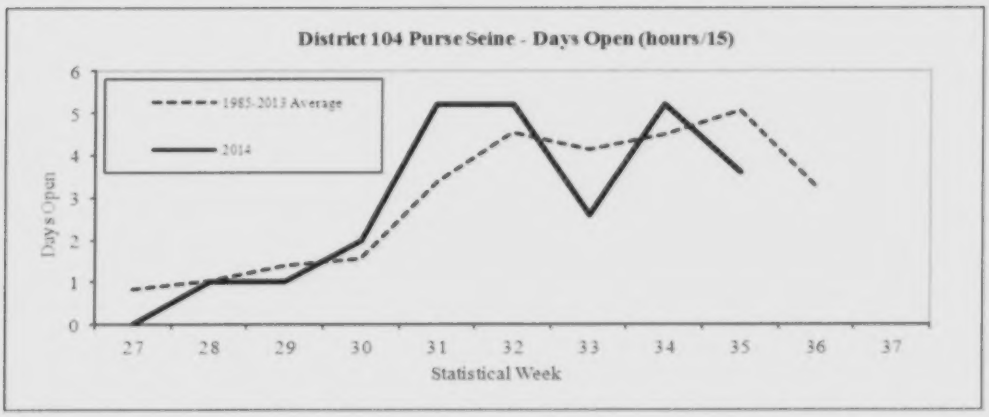


Figure 1. Days open by week in the District 104 purse seine fishery, 2014.

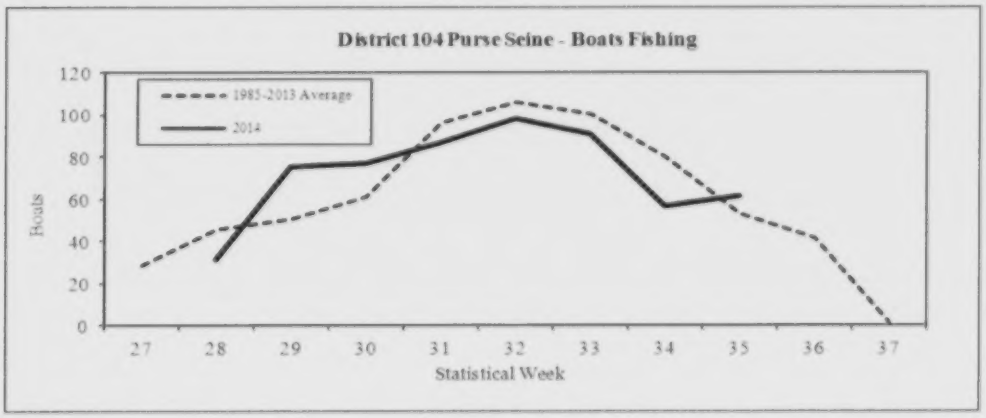


Figure 2. Number of boats fishing by week in the District 104 purse seine fishery, 2014.

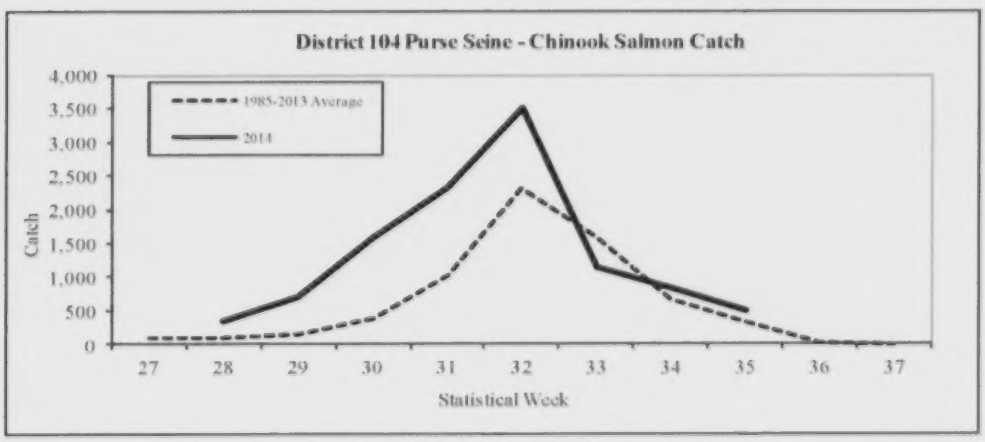


Figure 3. Chinook salmon catch by week in the District 104 purse seine fishery, 2014.

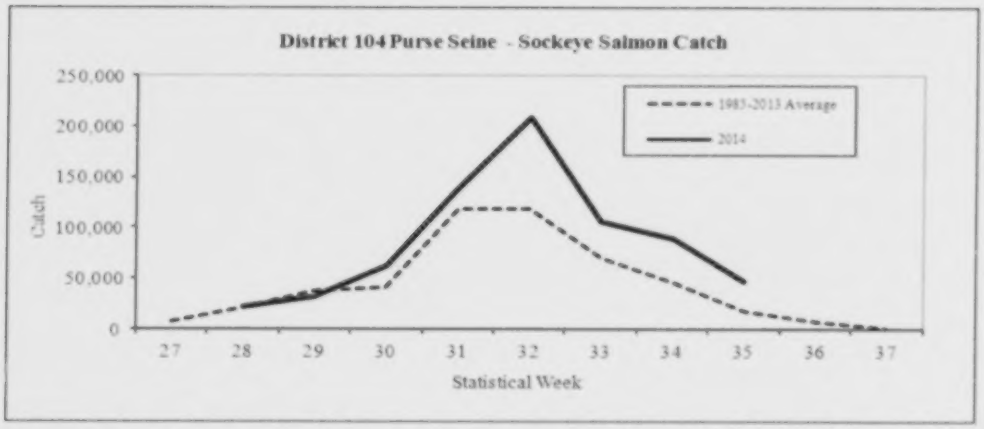


Figure 4. Sockeye salmon catch by week in the District 104 purse seine fishery, 2014.

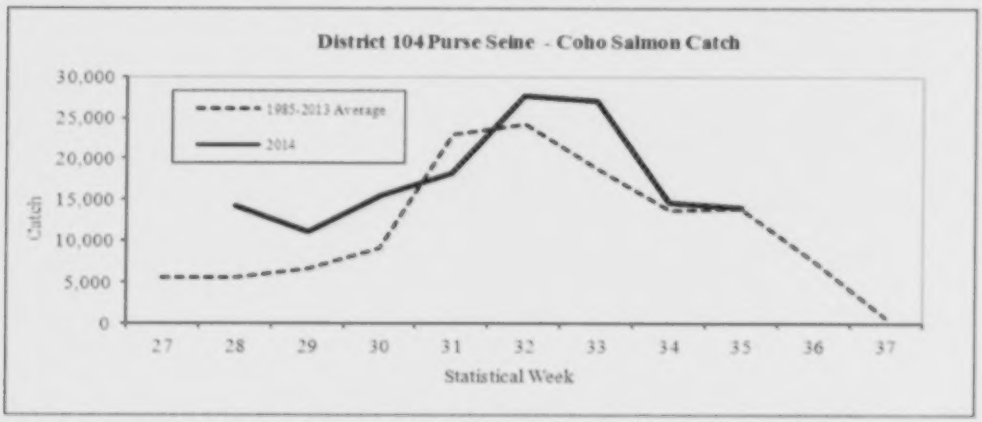


Figure 5. Coho salmon catch by the week in the District 104 purse seine fishery, 2014

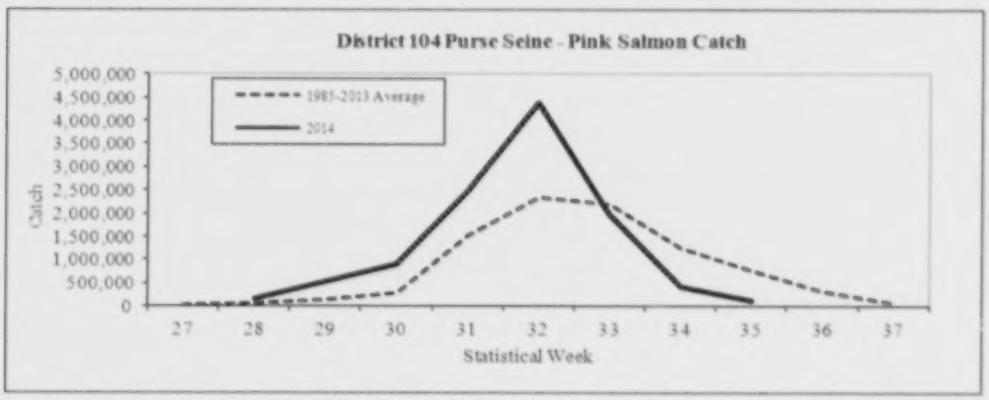


Figure 6. Pink Salmon catch by the week in the District 104 purse seine fishery, 2014.

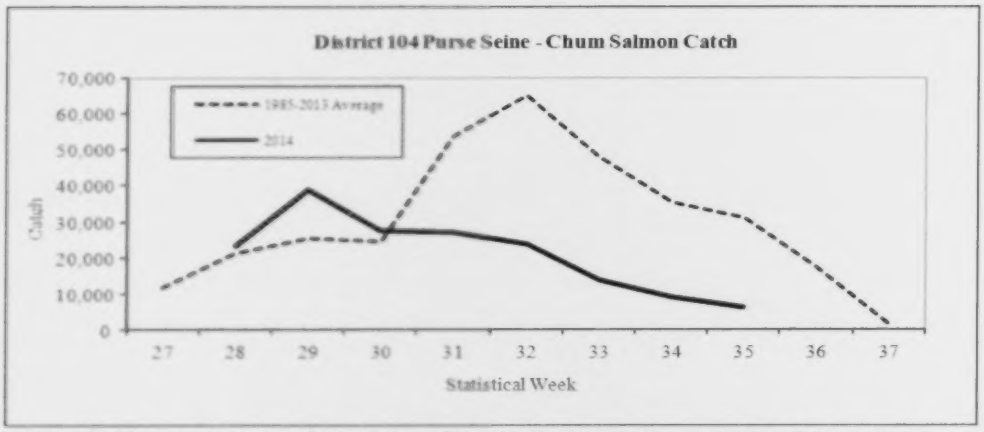


Figure 7. Chum salmon catch by the week in the District 104 purse seine fishery, 2014.

District 101 Drift Gillnet Fishery

The 2009 PST agreement calls for abundance based management of the District 101 (Tree Point) drift gillnet fishery. The agreement specifies a harvest of 13.8 percent of the AAH of the Nass River sockeye run. For the 2014 season, DFO forecast a total return of 652,000 Nass River sockeye salmon. The AAH is calculated as the total run of Nass sockeye salmon minus either the escapement requirement of 200,000 or the actual in-river escapement, whichever is less.

The District 101 drift gillnet fishery opens by regulation on the third Sunday in June, which was June 15 in 2014. During the early weeks of the fishery, management is based on the run strength of Alaska wild stock chum and sockeye salmon and on the run strength of Nass River sockeye salmon. Beginning in the third week of July, when pink salmon stocks begin to enter the fishery in large numbers, management emphasis shifts by regulation to that species. By regulation, the District 101 Pink Salmon Management Plan begins the third Sunday in July and sets gillnet fishing time in this district in relation to the District 101 purse seine fishing time. Beginning in Week 36 (August 31) management was based on the strength of wild stock fall chum and coho salmon.

The District 101 drift gillnet fishery opened Sunday June 15 (week 25) in 2014. The number of days the fishery was open was slightly above average all season (Figure 8). The number of boats fishing during weekly openings remained below average until late in the season (Figure 9). The total number of individual boats fishing during the season was 73, which was 65% of the 1985-2012 average of 113 boats. A total of 55,828 sockeye salmon were harvested, which was only 45% of the 1985-2013 average of 125,335 fish (Table 3). Catches of sockeye salmon were below treaty period averages throughout the entire season (Figure 10). The cumulative sockeye salmon harvest prior to the initiation of the PSMP in Week 30 was 35,506 fish, or about 64% of the season's total sockeye salmon harvest. The final number of Nass River sockeye harvested at Tree Point will not be available until catch, escapement, and stock composition estimates are finalized for the 2014 season. In past years approximately 65% of the District 101 gillnet sockeye harvest has been of Nass River origin, therefore we would anticipate that approximately 36,000 Nass River sockeye may have been harvested in the District 101 gillnet fishery in 2014.

Coho salmon catches were near average through week 34, and then increased to well above average in late August and September (weeks 35–39, Figure 11). Pink salmon catches were also well above average most of the season (Figure 12). Chum salmon catches were below average in most weeks of the fishery (Figure 13), as were Chinook salmon catches (Figure 14).

Table 3. Weekly catch and effort in the Alaska District 101 commercial drift gillnet fishery, 2014.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours
25	6/15	420	5,398	296	27	2,120	40	96
26	6/22	226	7,336	488	280	11,230	41	96
27	6/29	210	10,614	925	10,295	23,590	47	96
28	7/6	179	6,442	1,465	56,004	38,903	45	96
29	7/13	92	5,716	873	83,678	31,443	49	96
30	7/20	33	4,384	1,171	68,618	22,312	47	96
31	7/27	16	3,477	1,774	83,620	8,549	41	120
32	8/3	16	3,638	2,832	117,002	5,939	37	120
33	8/10	10	3,624	2,527	96,573	4,025	33	135
34	8/17	7	3,018	3,090	123,629	4,084	33	120
35	8/24	5	1,473	7,593	60,027	6,862	39	120
36	8/31	10	555	15,849	8,020	8,858	40	96
37	9/7	22	102	17,098	520	7,307	44	96
38	9/14	11	33	18,897	52	6,082	39	96
39	9/21	0	17	15,029	12	2,659	32	96
40	9/28	0	1	1,435	0	326	12	96
Total		1,257	55,828	91,342	708,357	184,289	73	1,671
1985-2013 Avg.		1,510	125,335	48,478	514,015	304,068	113	1,380

Table 4. Sockeye salmon harvest in the Alaska District 101 gillnet fishery, 1958-2014, and comparison of harvest and effort (boats, hours, and boat hours) between weeks 26 and 35 when sockeye salmon are most abundant in this district.

	Total	Catch and Effort between Weeks 26-35			
Year	Sockeye Harvest	Sockeye Harvest	Individual Permits Fished	Hours	Boat-Hours[1]
1985	173,100	159,021	153	1,032	106,209
1986	145,699	143,286	198	960	109,490
1987	107,503	106,638	170	615	64,104
1988	116,115	115,888	187	756	93,072
1989	144,936	130,024	176	1,023	117,465
1990	85,691	78,131	150	840	70,421
1991	131,492	123,508	130	984	80,064
1992	244,649	243,878	118	1,080	94,159
1993	394,098	390,299	148	1,032	102,814
1994	100,377	98,725	142	984	74,408
1995	164,294	151,131	128	1,008	82,512
1996	212,403	175,569	129	1,104	86,108
1997	169,474	152,662	128	1,008	81,672
1998	160,506	159,307	124	1,044	87,358
1999	160,028	158,268	118	1,032	80,424
2000	94,651	94,399	95	912	49,488
2001	80,041	62,129	73	1,020	46,874
2002	120,353	106,360	68	1,008	42,528
2003	105,263	96,921	68	1,104	44,008
2004	142,357	141,395	61	1,104	42,400
2005	79,725	75,875	69	1,104	40,864
2006	62,770	53,048	45	840	28,265
2007	66,822	50,642	54	1,032	33,713
2008	34,113	30,672	47	936	31,961
2009	69,859	69,325	62	1,080	43,432
2010	62,680	61,987	66	1,008	45,135
2011	88,618	87,744	84	840	47,627
2012	62,506	40,518	81	1,008	43,695
2013	54,575	45,413	91	1,104	59,437
2014	55,828	49,722	73	1,095	44,551
Average 1985–2013	123,018	115,083	108	990	65,809

[1] Boat hours equals the sum of all weekly estimates of boat hours: boats fished multiplied by open hours. Boat hours does not equal individual permits fished multiplied by total open hours.

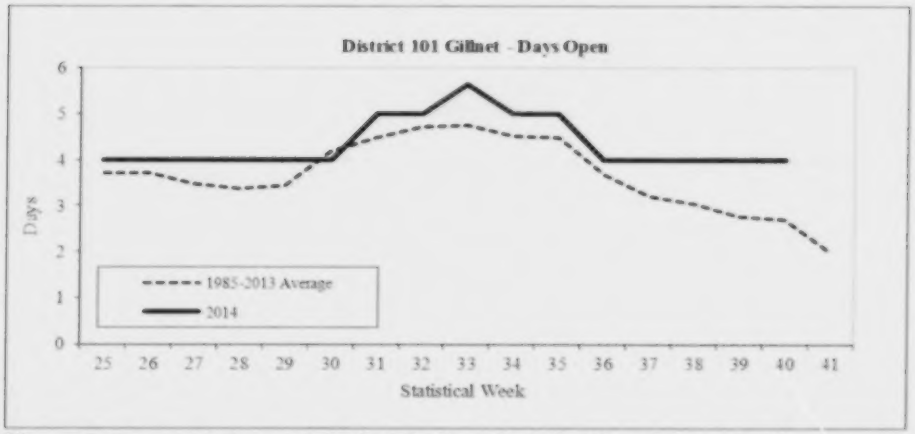


Figure 8. Days open by week in the District 101 drift gillnet fishery, 2014.

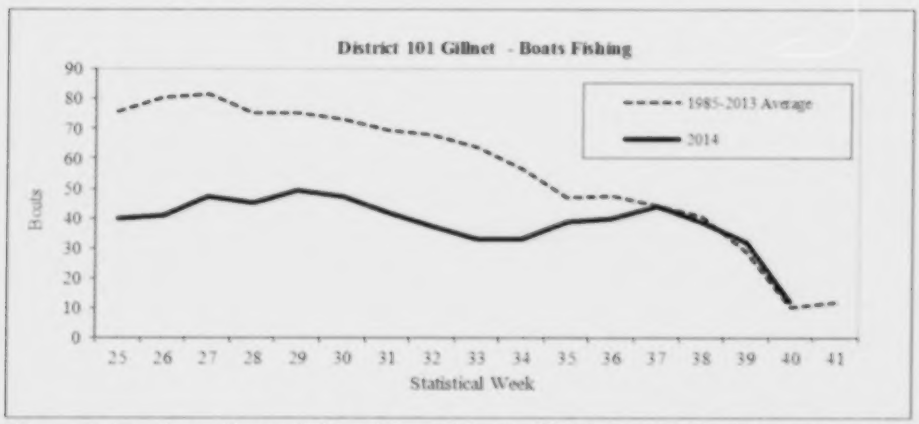


Figure 9. Number of boats fishing by week in the District 101 drift gillnet fishery, 2014.

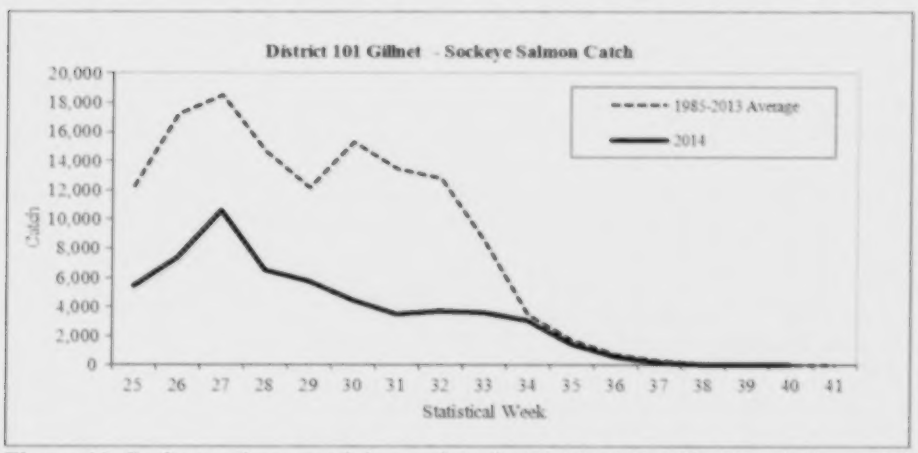


Figure 10. Sockeye salmon catch by week in the District 101 drift gillnet fishery, 2014.

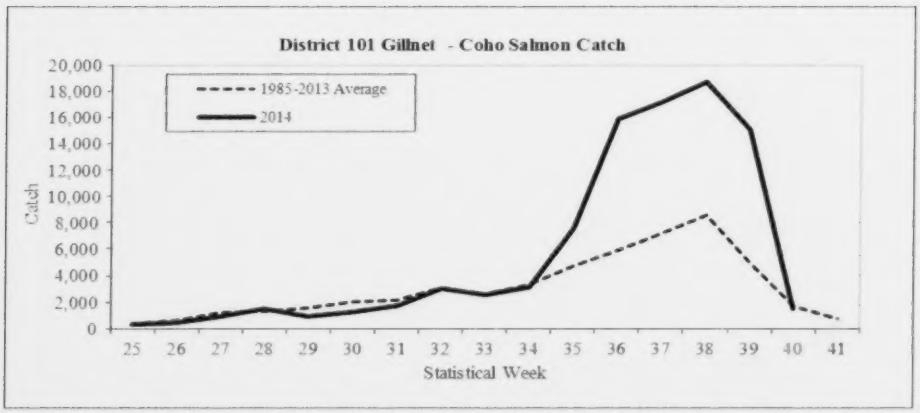


Figure 11. Coho salmon catch by week in the District 101 drift gillnet fishery, 2014.

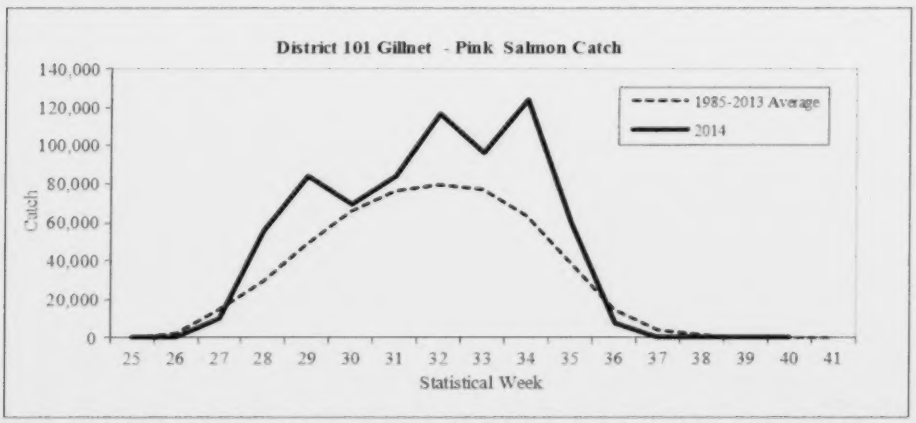


Figure 12. Pink salmon catch by week in the District 101 drift gillnet fishery, 2014

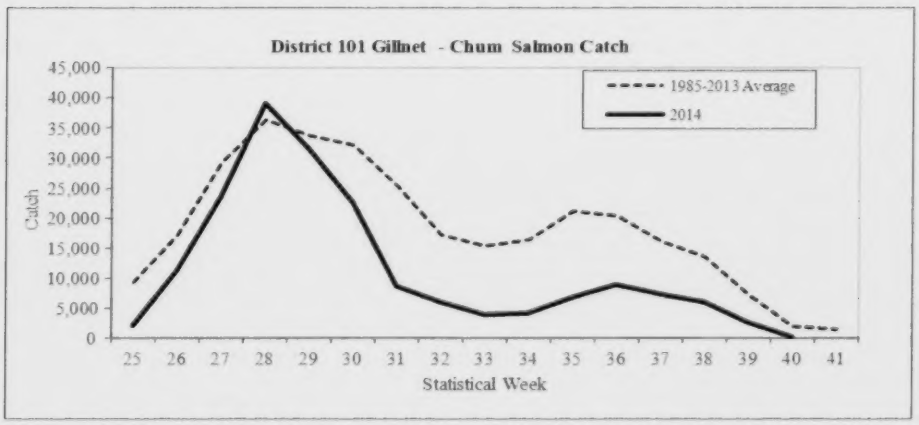


Figure 13. Chum salmon catch by week in the District 101 drift gillnet fishery, 2014.

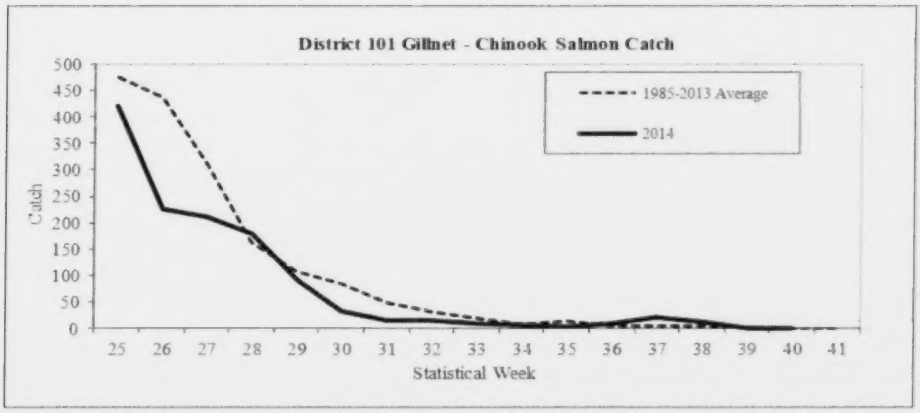


Figure 14. Chinook salmon catch by week in the District 101 drift gillnet fishery, 2014.

Pink, Sockeye, and Chum Salmon Escapements

Escapements of pink salmon were generally very strong throughout southern Southeast Alaska and along the northern outer coast, but were very poor throughout much of the northern inside waters. The total 2014 Southeast Alaska pink salmon escapement index of 13.8 million index fish ranked 14th since 1960, and was the highest even-year index since 2004. Biological escapement goals were exceeded in the Southern Southeast and Northern Southeast Outside subregions, but the escapement index for the Northern Southeast Inside Subregion was below the goal range in 2014 (Table 5). On a finer scale, escapements met or exceeded management targets for 8 of 15 districts in the region and for 26 of the 46 pink salmon stock groups in Southeast Alaska. Nearly all of the districts and stock groups that were below management targets were in the Northern Southeast Inside Subregion. The Southern Southeast Subregion includes all of the area from Sumner Strait south to Dixon Entrance (Districts 101–108). The escapement index value of 9.65 million exceeded the escapement goal range of 3.0 to 8.0 million index fish and was the 9th largest index value since 1960. The pink salmon harvest of 33.2 million in the Southern Southeast Subregion was 150% of the recent 10-year average and was the third highest even-year harvest since 1960. The overall Southeast Alaska pink salmon harvest of 37.2 million fish was below the 2004–2013 average of 41.5 million, but was the highest even-year harvest since 2004.

Table 5. Southeast Alaska 2014 pink salmon escapement indices and biological escapement goals by subregion (in millions). The total is slightly more than the sum of all three subregions due to rounding of numbers.

	2014 Pink	Biological Escapement Goal	
Subregion	Salmon Index	Lower Bound	Upper Bound
Southern Southeast	9.65	3.0	8.0
Northern Southeast Inside	1.38	2.5	6.0
Northern Southeast Outside	2.75	0.75	2.50
Total	13.8		

Sockeye salmon returns throughout Southeast Alaska were generally strong in 2014, and escapement targets were met for 11 of the 13 sockeye salmon systems with formal escapement goals, with one system, Lost River (Yakutat), not having an escapement estimate due to a lack of a peak survey. The Hugh Smith Lake adult sockeye salmon escapement was 10,400, which was within the optimal escapement goal range of 8,000 to 18,000 adult sockeye salmon. Based on the expanded peak foot survey count, the escapement of sockeye salmon into McDonald Lake was estimated to be 43,400 fish, which was below the sustainable escapement goal range of 55,000 to 120,000 fish for the second year in a row.

For summer-run chum salmon, lower bound sustainable escapement goals were met for only one of the three subregions in Southeast Alaska. In Southeast Alaska, runs are broken into summer and fall runs. The Southern Southeast summer-run chum salmon stock group is composed of an aggregate of 13 summer-run chum salmon streams on the inner islands and mainland of southern Southeast Alaska, from Sumner Strait south to Dixon entrance, with a sustainable escapement goal of 54,000 index spawners (based on the aggregate peak survey to all 13 streams). Summer chum salmon escapements were below average at most index streams in southern Southeast Alaska, and the index of 42,000 in 2014 was below goal (Figure 15).

Cholmondeley Sound is the only area in southern Southeast Alaska with a formal escapement goal for fall chum salmon. Fall chum salmon runs are monitored in Cholmondeley Sound through aerial surveys at Disappearance and Lagoon creeks. The escapement index of 48,000 was at the upper bound of the sustainable escapement goal range of 30,000 to 48,000 index spawners (based on the aggregate peak survey to both streams; Figure 16).

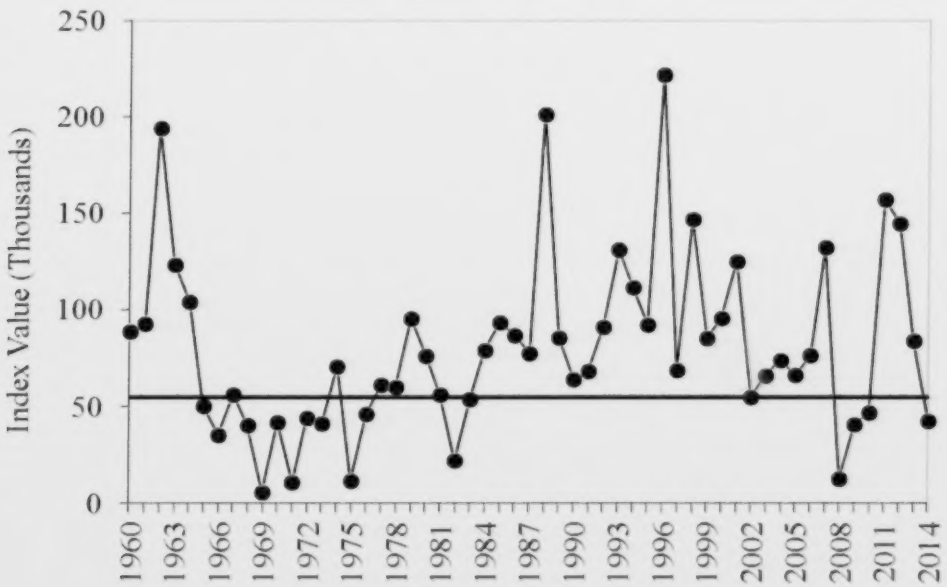


Figure 15. Observed escapement index value by year (solid circles) and the sustainable escapement threshold of 54,000 index spawners (horizontal line) for wild summer run chum salmon in the Southern Southeast Subregion, 1980-2014.

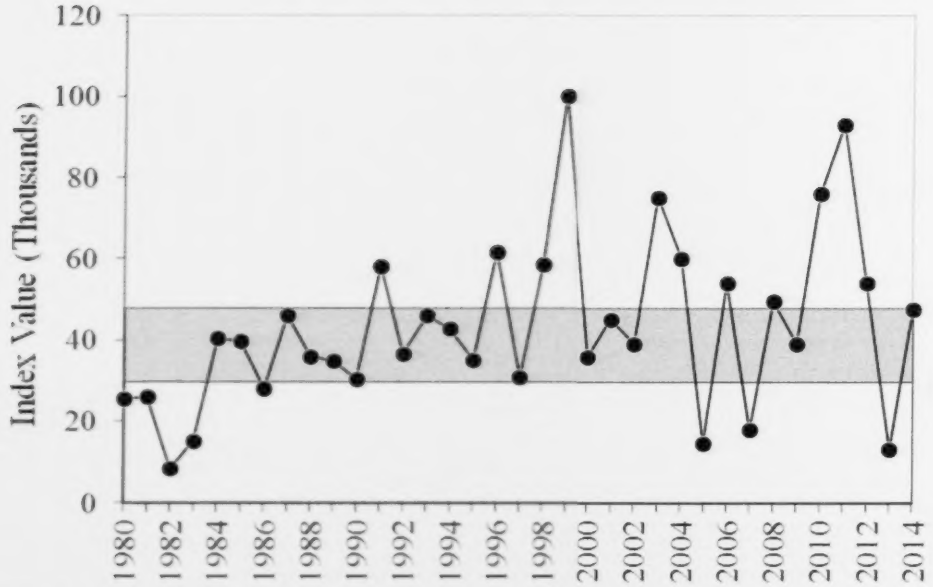


Figure 16. Observed escapement index value by year (solid circles) and the sustainable escapement goal range of 30,000 to 48,000 index spawners (shaded area) for Cholmondeley Sound fall run chum salmon, 1980-2014.

Transboundary Area Fisheries

Stikine River Area Fisheries

The initial preseason forecast for Chinook salmon returning to the Stikine River was approximately 26,000 fish, which was not large enough to allow for directed Chinook salmon fisheries in districts 106 and 108. Terminal Chinook salmon run projections through mid-June remained near pre-season projections. The initial openings of the commercial drift gillnet fisheries in districts 106 and 108 occurred on June 16, 2014.

The 2014 Stikine River sockeye salmon return was expected to be below the previous 10-year average. The preliminary forecast for total return to the Stikine River was 152,400 sockeye salmon. The 2014 forecast included approximately 34,100 wild Tahltan (22%), 37,500 enhanced Tahltan (25%), 25,100 enhanced Tuya (16%), and 55,800 wild mainstem (37%) sockeye salmon. Due to the near identical return timing of the Tahltan Lake and Tuya Lake stocks, any open fishing periods in District 108, and to a lesser extent in District 106, are determined by the inseason abundance estimate of the Tahltan Lake return. Typically, the Tahltan Lake and Tuya Lake sockeye salmon run timing peaks in statistical week 27 (June 30–July 6) through the districts 106 and 108 fisheries. During an average Tahltan Lake run significant numbers of sockeye salmon could be present as early as statistical week 24 (June 9–15) and as late as statistical week 31 (July 28–August 3). The 2014 returns of local area sockeye salmon stocks were expected to be average.

The District 106 and 108 drift gillnet fishery opened for an initial two-day period on Monday, June 16 (week 25). Surveys of the gillnet fleet did not indicate an abundance of sockeye salmon significantly above the preseason forecast and no additional fishing time occurred. The fisheries opened for two days on June 23 (week 26). Surveys of the fleet indicated above average harvest and below average effort, so a 24-hour extension occurred. Sockeye salmon abundance improved in week 27 and catches in Canadian inriver fisheries indicated that the sockeye salmon run was likely well above pre-season abundance estimates. Due

to the higher than expected sockeye salmon abundance, a 24-hour mid-week opening was made. The inseason assessment for Chinook salmon returning to the Stikine River was 26,000 large adults, and the escapement was expected to be within the goal range of 14,000 to 28,000 fish.

In week 28 the fisheries opened for an initial three-day period on July 6. The inseason abundance estimate for Stikine River sockeye salmon was 258,000, which was well above the pre-season forecast and allowed for a 24-hour extension of the fishery. The District 6 and 8 drift gillnet fisheries continued to open for at least three days weekly through late July (Figures 17 and 24). Management emphasis switched to pink salmon in early August and openings were generally four days weekly through August (Figures 17 and 24). In late August, management focus switched to coho salmon and the fisheries continued to be open for 4 days weekly in nearly all weeks through the remainder of the fisheries. The number of boats participating in the District 106 fishery was below average early in the season and above average from mid-August (week 34) through the end of the season (Figure 18). The number of boats participating in the District 108 fishery was below average in all but one week (Figure 25).

During the 2014 season, 415,392 pink salmon, 58,430 sockeye salmon, 106,563 chum salmon, 286,822 coho salmon, and 2,092 Chinook salmon were harvested in the District 106 drift gillnet fishery (Table 6). Although there were no directed Chinook salmon fisheries early in the season, catches were generally above average from early-July through the end of the season (Figure 19). Sockeye salmon catches were below or near average throughout the season (Figure 20) and the total sockeye salmon catch of 58,430 fish was only 64% of the recent ten-year average. Catches of coho salmon were well above average in most weeks, and the overall harvest was more than double the recent ten-year average of 129,000 fish (Figure 21). Pink salmon catches were also well above average during the peak weeks of the season (Figure 22), and the overall harvest of 415,392 was 152% of the recent ten-year average. Chum salmon catches were below average in nearly all weeks (Figure 23).

In the District 108 drift gillnet fishery, 33,830 pink salmon, 19,808 sockeye salmon, 84,451 chum salmon, 30,177 coho salmon, and 8,023 Chinook salmon were harvested in 2014 (Table 7). Although there were no directed Chinook salmon fisheries early in the season, catches were above average from mid-June to late July (Figure 26). Sockeye salmon catches were well below average throughout the season (Figure 27) and the total sockeye salmon catch of 19,808 fish was 37% of the recent ten-year average. Catches of coho salmon were just below or near average in most weeks of the fishery, with a large spike in week 36, when the catch of 8,427 was about double average for the week. The overall coho salmon harvest was very close to the recent ten-year average of 31,573 fish (Table 7, Figure 28). Pink salmon catches were below average most of the season and the overall harvest was 64% of the recent ten-year average (Figure 29). Chum salmon catches were below average throughout the season and the overall harvest was just over half of the recent ten-year average (Figure 30).

Table 6. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 2014. Catches do not include Blind Slough terminal area harvests.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	16-Jun	200	3,218	2,290	8	146	32	2	64
26	24-Jun	129	2,626	4,720	104	712	26	2	52
27	29-Jun	144	5,218	10,082	3,770	5,596	35	3	105
28	6-Jul	262	10,664	24,031	15,251	21,788	41	4	164
29	13-Jul	261	8,158	14,116	20,745	12,973	51	3	153
30	20-Jul	340	9,296	10,796	42,450	20,704	62	3	186
31	27-Jul	97	3,545	7,039	42,373	9,868	55	3	165
32	3-Aug	104	6,924	8,751	121,424	7,634	66	4	264
33	10-Aug	23	1,791	7,489	65,162	2,582	41	4	164
34	17-Aug	43	4,880	16,951	75,482	4,800	69	4	276
35	24-Aug	61	1,528	16,760	24,260	2,846	84	3	252
36	31-Aug	134	430	41,923	4,044	6,050	94	4	376
37	7-Sep	206	97	54,095	306	7,077	96	4	384
38	14-Sep	70	50	48,832	13	2,997	94	4	376
39	21-Sep	8	5	14,873	0	686	52	4	208
40	28-Sep	8	0	3,426	0	98	21	4	84
41	5-Oct	2	0	648	0	6	4	3	12
Total		2,092	58,430	286,822	415,392	106,563	143	58	3,284
2004-2013 Average		2,169	90,664	128,879	272,465	172,005	154	49	2,693
2014 as % of Average		96%	64%	223%	152%	62%	93%	118%	122%

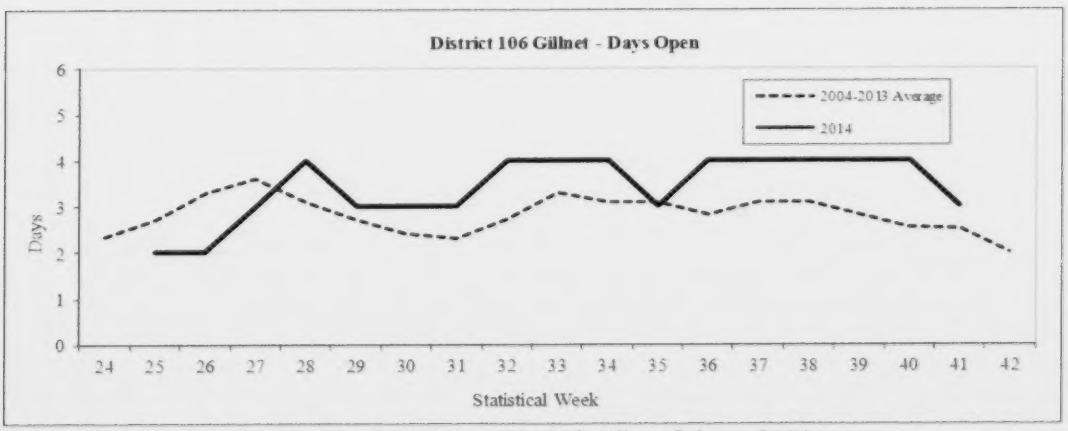


Figure 17. Days open by week in the District 106 drift gillnet fishery, 2014.

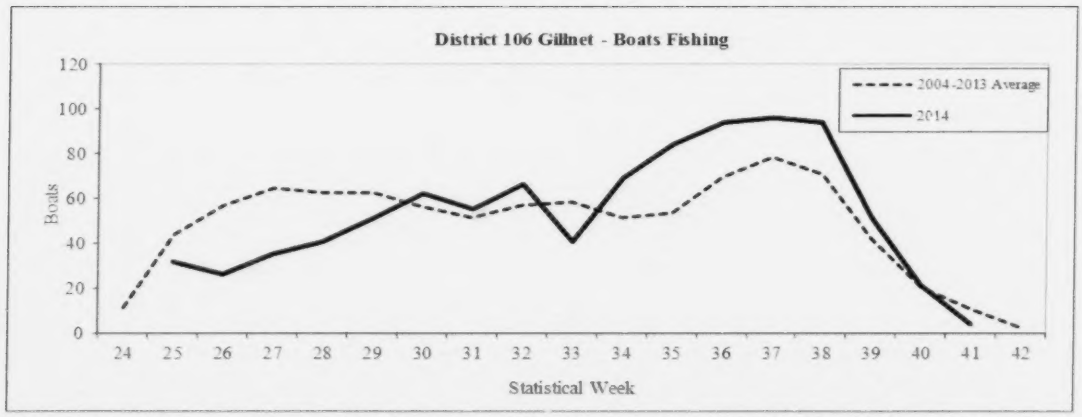


Figure 18. Number of boats fishing by the week in the District 106 drift gillnet fishery, 2014.

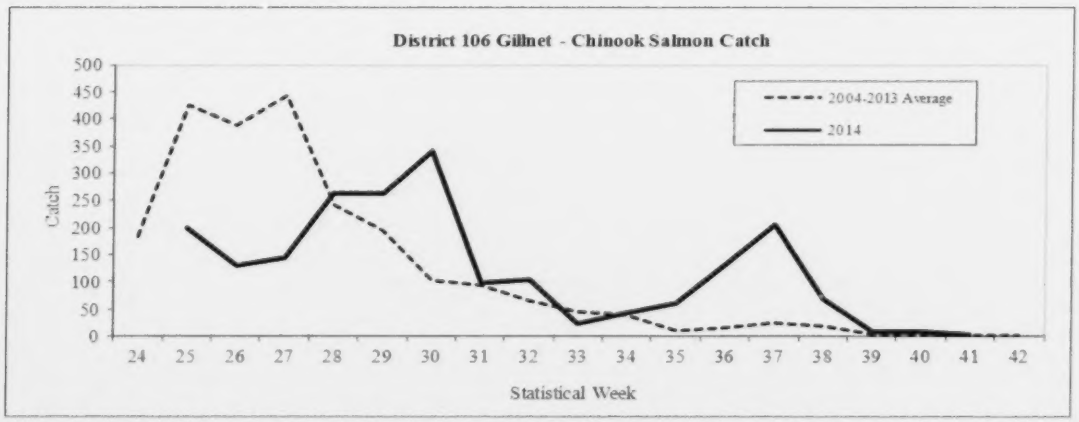


Figure 19. Chinook salmon catch by week in the District 106 drift gillnet fishery, 2014.

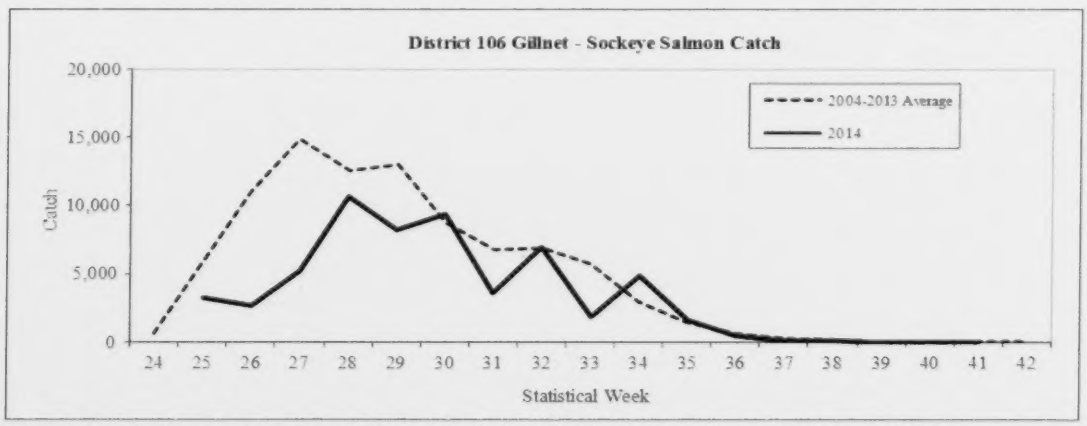


Figure 20. Sockeye salmon catch by week in the District 106 drift gillnet fishery, 2014.

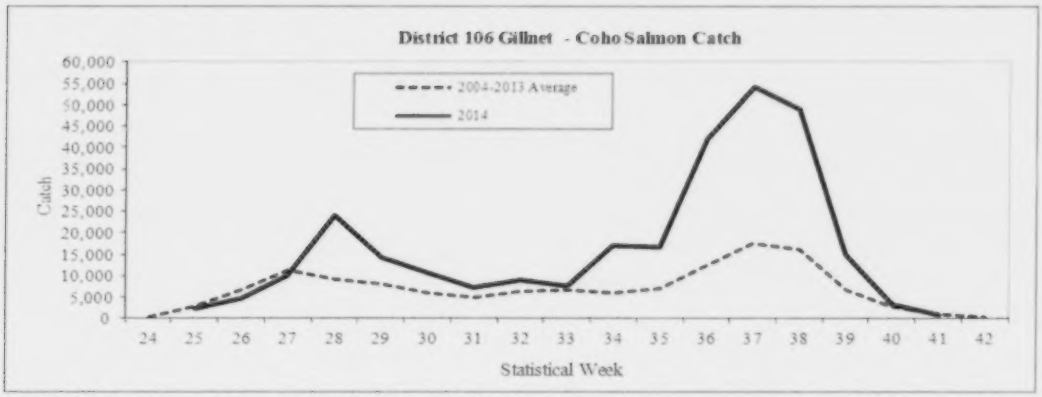


Figure 21. Coho salmon catch by the week in District 106 drift gillnet fishery, 2014.

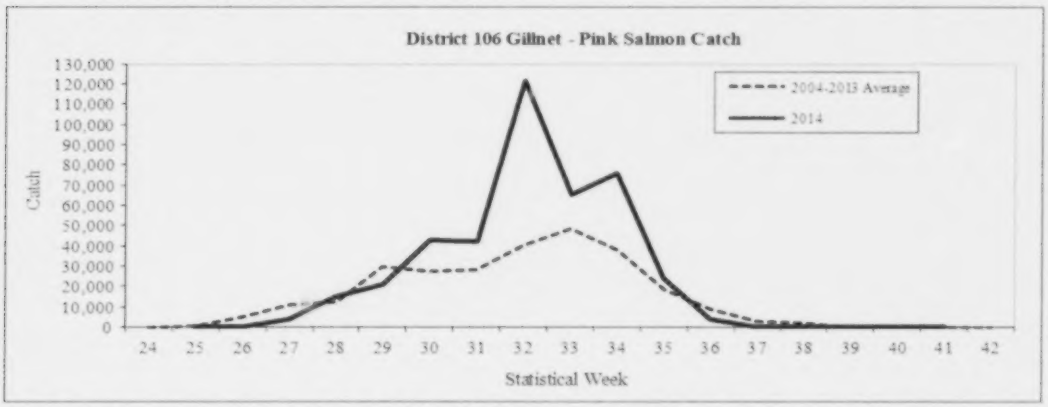


Figure 22. Pink salmon catch by week in the District 106 drift gillnet fishery, 2014.

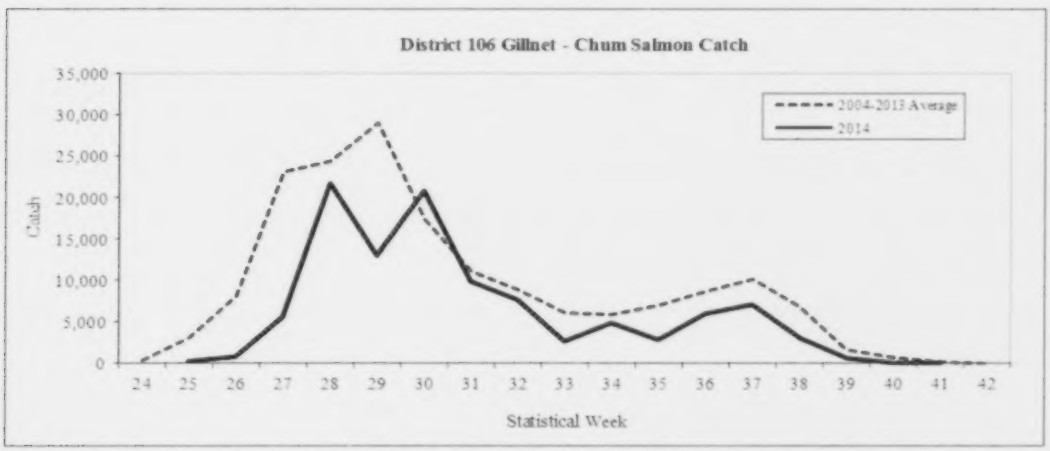


Figure 23. Chum salmon catch by the week in the District 106 drift gillnet fishery, 2014.

Table 7. Weekly salmon catch and effort in the Alaskan

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	16-Jun	2,111	1,699	15	0	111	45	2	90
26	22-Jun	1608	2635	25	0	321	36	2	72
27	29-Jun	2,254	5,965	486	31	2,663	33	5	114
28	6-Jul	627	2,687	978	503	5,683	20	4	80
29	13-Jul	857	2,217	541	3,762	16,403	37	4	105
30	20-Jul	394	2,632	1,210	10,953	28,358	53	5	190
31	27-Jul	53	776	1,150	7,913	16,705	53	5	177
32	3-Aug	60	828	1,835	7,629	8,228	31	4	124
33	10-Aug	11	146	960	1,693	4,550	30	4	120
34	17-Aug	15	124	2,500	943	815	15	4	60
35	24-Aug	9	62	3,124	188	237	19	3	57
36	31-Aug	11	34	8,427	214	268	34	4	136
37	7-Sep	12	2	4,357	1	97	21	4	84
38	14-Sep	1	1	2,536	0	12	10	4	40
39-40	21-Sep	0	0	2,033	0	0	12	8	48
Total		8,023	19,808	30,177	33,830	84,451	106	65[b]	1,497
2004-2013 Average		12,583	53,392	31,573	52,466	151,966	147	54	2,533
2014 as % of Average		64%	37%	96%	64%	56%	72%	114%	59%

a. The 2014 District 108 drift gillnet catch and effort, as well as the 2004-2013 averages, are for the traditional (directed sockeye salmon portion) fishery only. There was no directed Chinook salmon fishery in 2014.

b. The District 108 drift gillnet fishery was open for three days in week 41 but there was no effort.

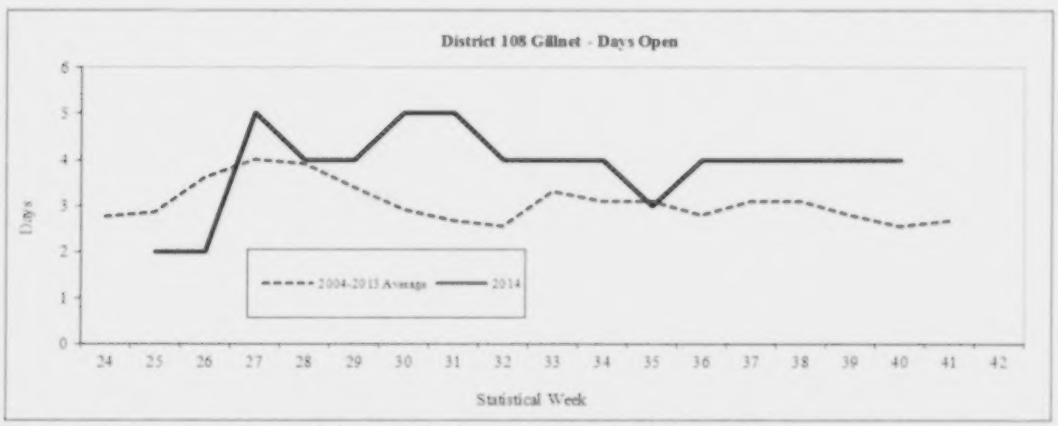


Figure 24. Days open by week in the District 108 drift gillnet fishery, 2014.

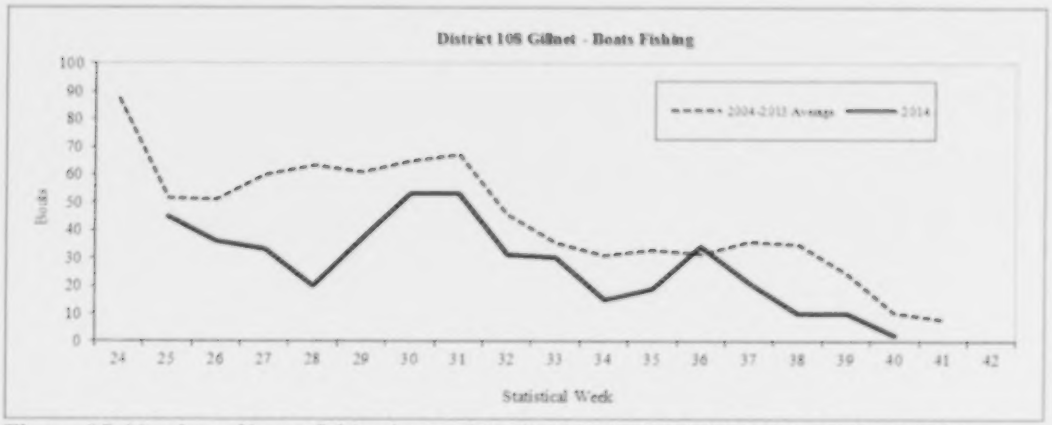


Figure 25. Number of boats fishing by week in the District 1085 drift gillnet fishery, 2014.

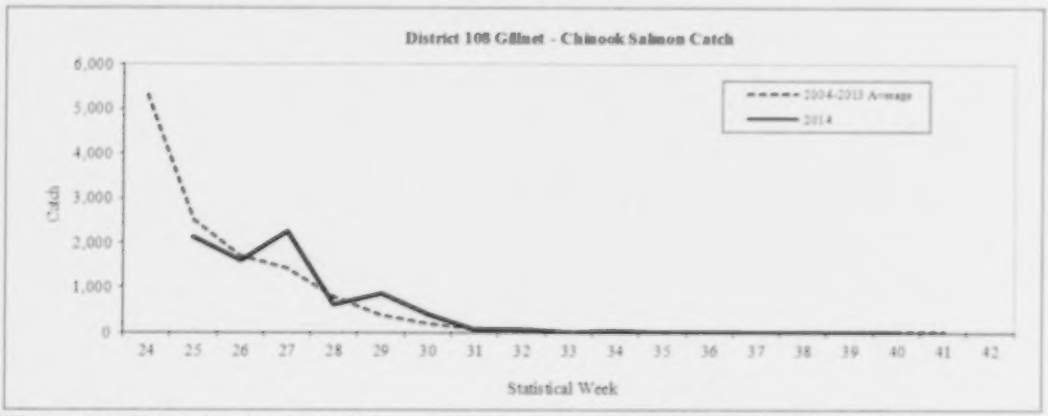


Figure 26. Chinook salmon catch by week in the District 108 drift gillnet fishery, 2014

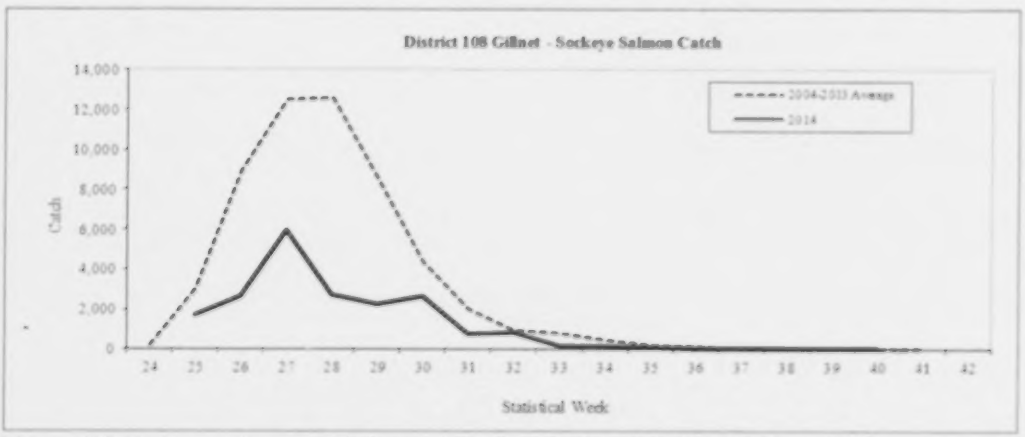


Figure 27. Sockeye salmon catch by week in the District 108 gillnet fishery, 2014.

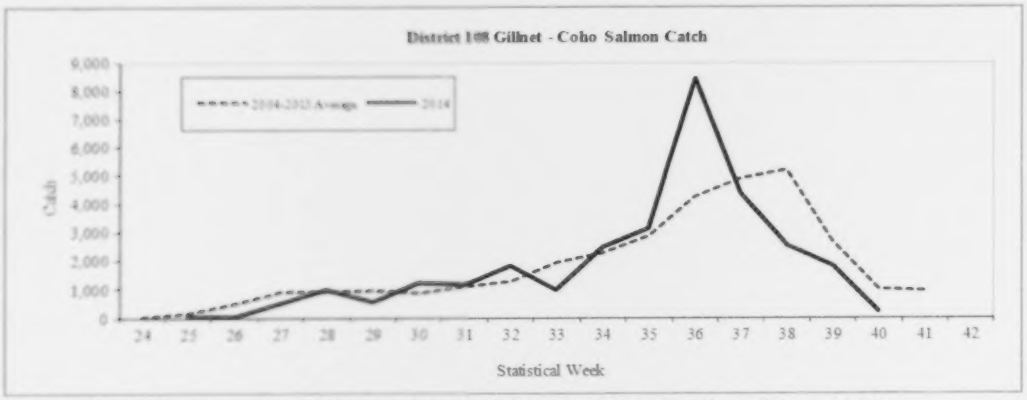


Figure 28. Coho salmon catch by week in the District 108 drift gillnet fishery, 2014.

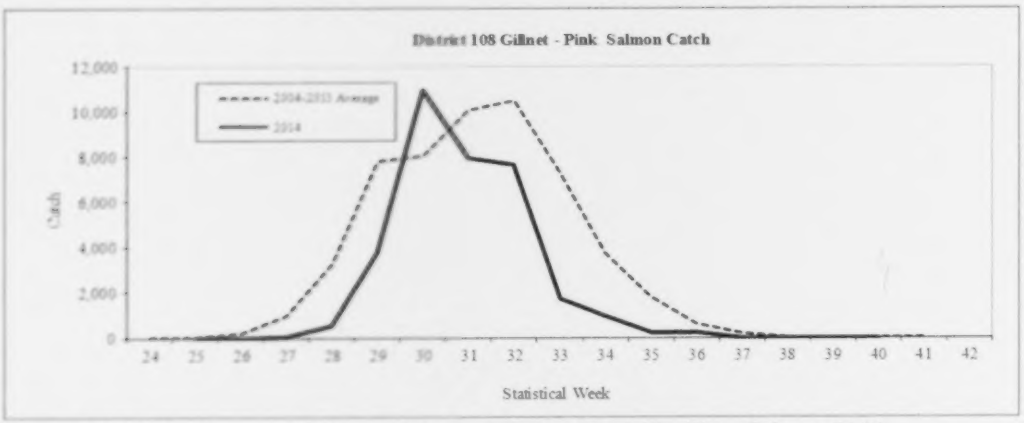


Figure 29. Pink salmon catch by week in the District 108 drift gillnet fishery, 2014.

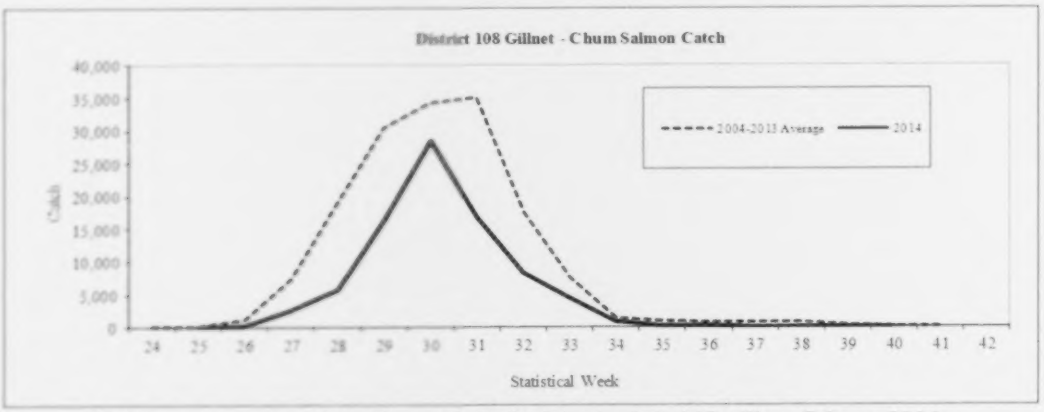


Figure 30. Chum salmon catch by the week in the District 108 drift gillnet fishery, 2014.

Taku River Area Fisheries

The escapement goal range for large Taku River Chinook salmon is 19,000 to 36,000 fish with a point goal of 25,500 fish. The PST established base level catches of 1,500 and 3,500 large Chinook salmon for Canada and the U.S., respectively, that reflect the average harvests by each country between 1985 and 2003. In years of high abundance, directed fisheries can be implemented to harvest runs in excess of escapement needs. The 2014 preseason terminal run forecast for the Taku River was 26,800 large Chinook salmon, which did not allow for any directed Chinook salmon fisheries in District 111.

The sockeye salmon return to the Taku River in 2014 was expected to be approximately 190,000 fish, based on the average of Canadian stock-recruit and sibling forecasts. Douglas Island Pink and Chum, Inc. (DIPAC) forecast 144,000 enhanced sockeye salmon returning to Port Snettisham. For chum salmon, DIPAC forecast a return of 869 thousand fish to Gastineau Channel and Limestone Inlet, which was below the recent average.

The traditional drift gillnet fishery in District 111 began on Sunday, June 15, 2014 (week 25). The initial drift gillnet opening of the season in District 111 was for two days, due to the need for Taku River Chinook salmon conservation. A six-inch maximum mesh restriction was in place and the open area was well off the Taku River flats to pass more Chinook salmon through the fishery. Effort for the opening was 34 boats, which was below the ten-year average of 38 boats. The sockeye salmon catch was near the recent ten-year average, but chum salmon catch rates were well above average, with a harvest 3,986 fish (Table 8; Figures 34 and 37). A total of 477 Chinook salmon were harvested, which was below average for the week (Figure 33).

From late June through early August (weeks 26–32) effort in the District 111 drift gillnet fishery was generally below average, with a peak of 107 boats fishing in week 28 (Figure 32). Catches of sockeye salmon were near or below average through early August, with a traditional fishery peak catch of 16,541 fish in week 30 (Figure 34). Enhanced Speel Arm sockeye salmon made up a significant proportion of the total harvest in District 111 from early July to mid-August. Chum salmon catches were also below average and approximately 287,000 fish were harvested from late June to early August (Figure 37). Most of the summer-run chum salmon harvest in District 111 consists of hatchery fish returning to the Douglas Island Pink and Chum (DIPAC) release sites in Gastineau Channel and Limestone Inlet. Chinook salmon catches were near average through the tail end of the run and few fish were caught after mid-July (Figure 33). Pink salmon catches were well below average through early August (Figure 36).

During August and September (weeks 32–40) overall effort in the fishery was near average, with three days of fishing most weeks in August and five days in most weeks in September (Figure 31). The number of boats fishing was slightly above average from mid-August through September (Figure 32). The entrance of Port Snettisham was opened concurrently with the remainder of District 111 in weeks 33 and 34 to allow more opportunity to harvest Snettisham Hatchery sockeye salmon, but Speel Arm remained closed because the sockeye salmon count through the Speel Lake weir was only half of the lower bound of the escapement goal range of 4,000 to 13,000 fish. In week 35, the 4,000 fish minimum was reached on the first day (August 24) following the highest daily fish count of the season of 509 sockeye on August 23. The Speel Arm SHA was originally opened for two days and was then extended for one additional day, for a total of three days of fishing which matched the traditional District 111 opening. Fifty-four boats harvested 13,400 sockeye and small numbers of other species of salmon. The Speel Arm SHA was opened for four days in SW 36 and five days in SW 37. An additional 3,600 sockeye salmon were harvested in these two weeks for a total SHA harvest of 17,000 fish. Catches of coho salmon increased rapidly in early August and catches were well above average in September (Figure 35). Pink salmon catches remained below average for the remainder of the season. Chum salmon harvest dropped quickly in August with catches below the recent ten-year average in most of the remaining weeks of the fishery (Figure 37).

The total 2014 traditional fishery sockeye salmon harvest of 109,732 was 93% of the recent ten-year (2004-2013) average. Peak catches of sockeye salmon occurred in weeks 30 and 32 (late July and early August), which corresponded with normal peak timing over the past ten years (Figure 34). The total 2014 coho salmon harvest of 53,899 fish was 140% of the recent ten-year average (Figure 35). Approximately 83% of the coho salmon were harvested in Taku Inlet, which was near the ten-year average, and 17% were harvested from Stephens Passage and Port Snettisham. Coho stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaskan hatcheries.

The total catch of 291,355 chum salmon was only 55% of the recent ten-year average, and was comprised almost entirely of summer run fish (Figure 37). The summer chum run is considered to last through mid-August (week 33) and is comprised mostly of domestic hatchery fish and small numbers of wild stocks. Chum salmon returning to DIPAC release sites in Gastineau Channel and Limestone Inlet contributed a major portion of the harvest, but quantitative contribution estimates are not available. Approximately 63% of the District 111 chum harvest was taken in Taku Inlet, and 37% in Stephens Passage. The harvest of 3,006 fall-run chum salmon (i.e. chum salmon caught after week 33) was 64% of the recent ten-year (2004-2013) average. Most of these fall-run chum salmon are probably of wild Taku and Whiting River origin. Chum salmon escapement numbers to the Taku River are unknown; however, the numbers of fall chum passing through the fish wheels at Canyon Island were used as an index of escapement. The Canyon Island fish wheel project ceased operations on October 3, 2014, and the index of 310 chum salmon was near average for recent years where the fish wheels were operational into early October.

The 2014 District 111 pink salmon harvest of 29,182 fish was only 19% of the ten-year (2004-2013) average (Figure 36). The 2014 pink salmon escapement to the Taku River was unknown; however, the number of pink salmon passing through the fish wheels at Canyon Island is used as an index of escapement. The 2012 (parent year) Canyon Island pink salmon fish wheel catch was below average at 5,826 fish. The 2014 Canyon Island pink salmon fish wheel catch of 2,436 was only 20% of the 1986-2012 odd-year average of 11,976, and less than half of the parent-year fish wheel count.

A number of Chinook salmon stocks are known to contribute to the Juneau area sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of mature wild fish is believed to be the Taku River. Preliminary estimates indicate that approximately 714 of the Chinook salmon harvested in the Juneau sport fishery from weeks 16 through 28 were of Taku River origin (based on genetic stock identification analysis). The preliminary District 111 harvest of large Taku Chinook salmon during the accounting period was 488 in the drift gillnet fishery, 714 in the sport fishery, and an estimated 11 in the personal use fishery, for a total of 1,213. Harvests of large Taku Chinook salmon in these fisheries from week 29 onwards were minimal and resulted in a total catch that was well below the base level catch of 3,500 fish.

Table 8. Weekly salmon harvest in the Alaskan District 111 traditional commercial drift gillnet fishery, 2014.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	15-Jun	477	1,777	2	0	3,986	34	2	68
26	22-Jun	286	2,451	12	1	12,285	36	3	108
27	29-Jun	212	5,847	55	47	57,481	61	4	244
28	6-Jul	169	13,059	294	532	68,095	107	4	428
29	13-Jul	48	9,839	181	953	51,020	60	3	180
30	20-Jul	40	16,541	1,133	4,226	59,804	85	3	255
31	27-Jul	16	9,413	1,328	2,926	22,567	74	4	296
32	3-Aug	55	16,301	2,729	12,482	11,393	64	4	256
33	11-Aug	97	15,106	2,672	6,540	1,718	90	3	270
34	17-Aug	46	13,724	4,301	1,338	759	54	3	162
35	24-Aug	14	4,567	4,510	127	689	52	3	156
36	31-Aug	0	998	9,390	10	551	44	4	176
37	7-Sep	3	104	15,600	0	701	53	5	265
38	14-Sep	2	5	9,225	0	251	39	5	195
39	21-Sep	0	0	2,394	0	54	17	5	85
40-41[b]	28-Sep	0	0	73	0	1	4	10	35
Total		1,465	109,732	53,899	29,182	291,355	183	65	3,163
2004–2013 Average		1,865	118,010	38,625	155,063	533,610	182	55	3,214
2014 as % of Average		79%	93%	140%	19%	55%	100%	118%	98%

a. The 2014 District 111 drift gillnet catch and effort, as well as the 2004-20136 averages, are for the directed sockeye salmon portion of the fishery only. There was no directed fisher for Chinook salmon in District 111 in 2014 due to a low pre-season abundance forecast.
b. Opening with fewer than three permits, confidential information so data combined in catch table.

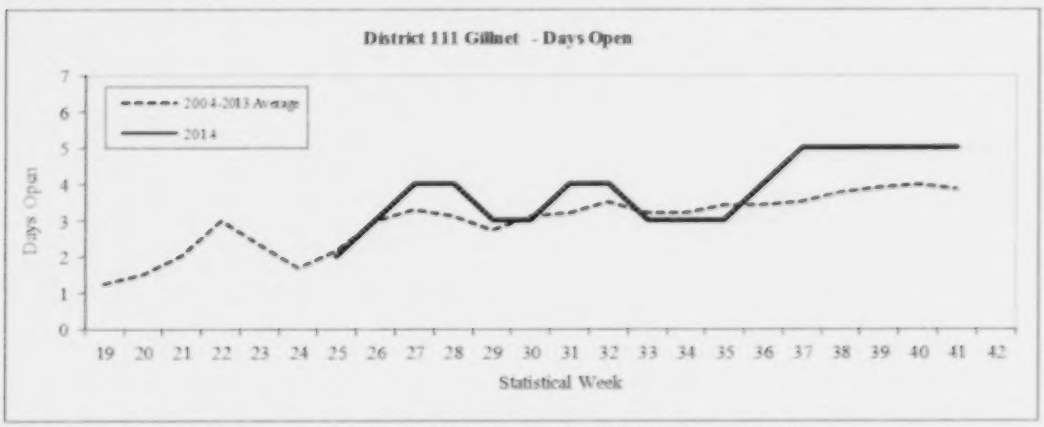


Figure 31. Days open by week in the District 111 drift gillnet fishery, 2014.

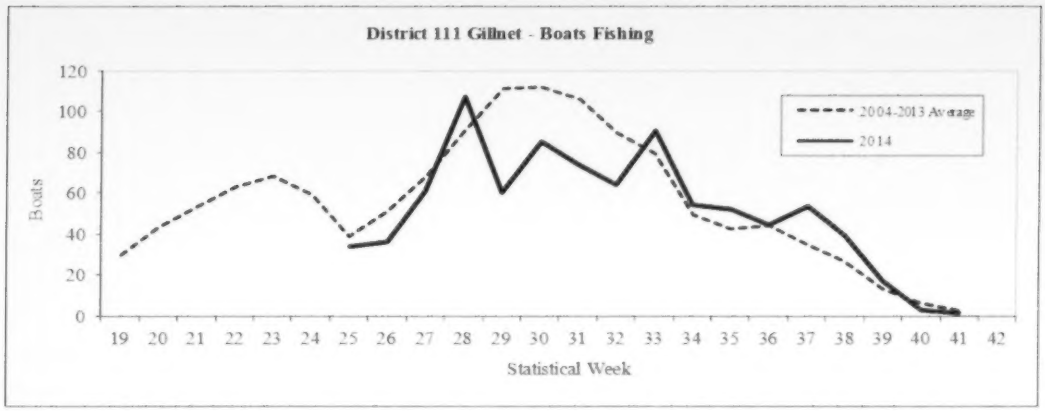


Figure 32. Number of boats fishing by week in the District 111 drift gillnet fishery, 2014.

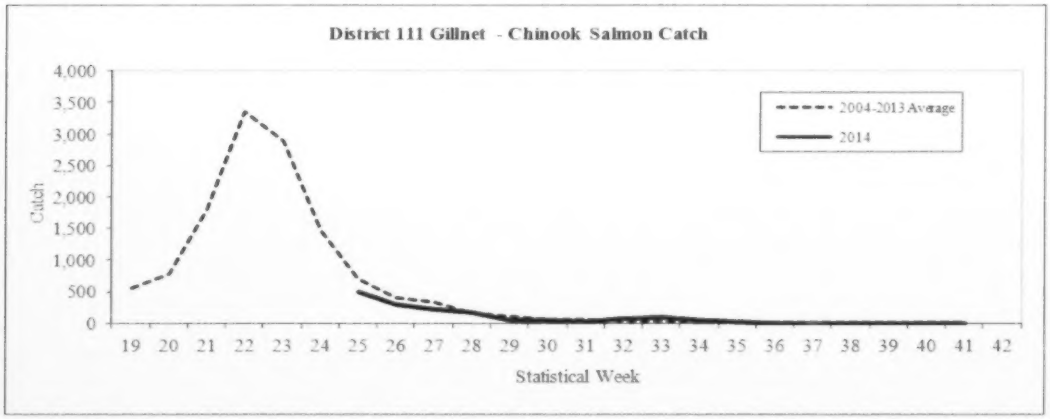


Figure 33. Chinook salmon catch by week in the District 111 drift gillnet fishery, 2014.

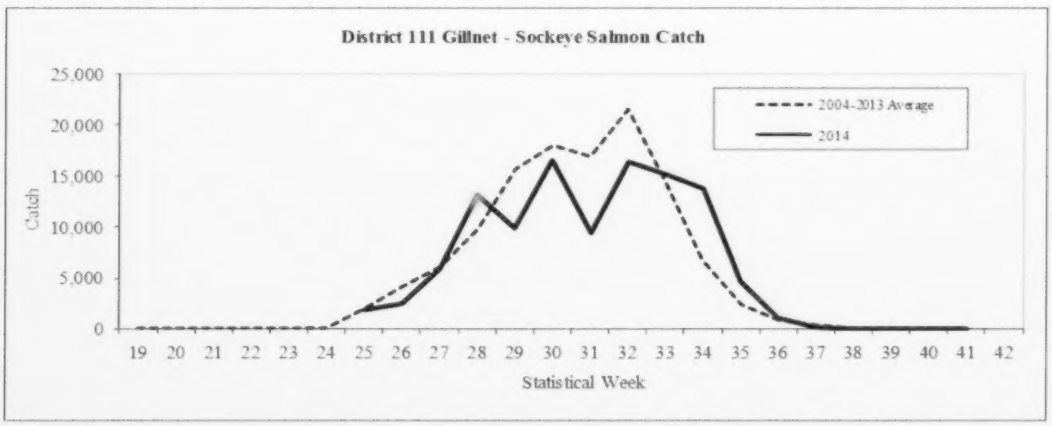


Figure 34. Sockeye salmon catch by week in the District 111 drift gillnet fishery, 2014.

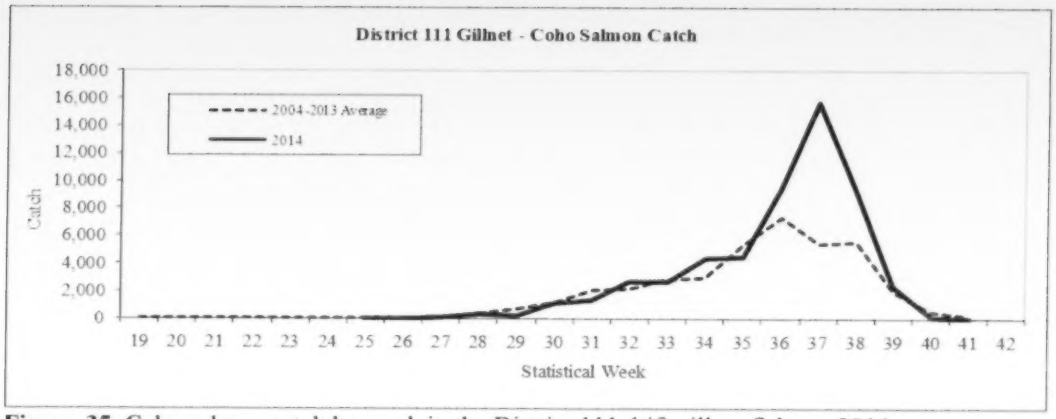


Figure 35. Coho salmon catch by week in the District 111 drift gillnet fishery, 2014.

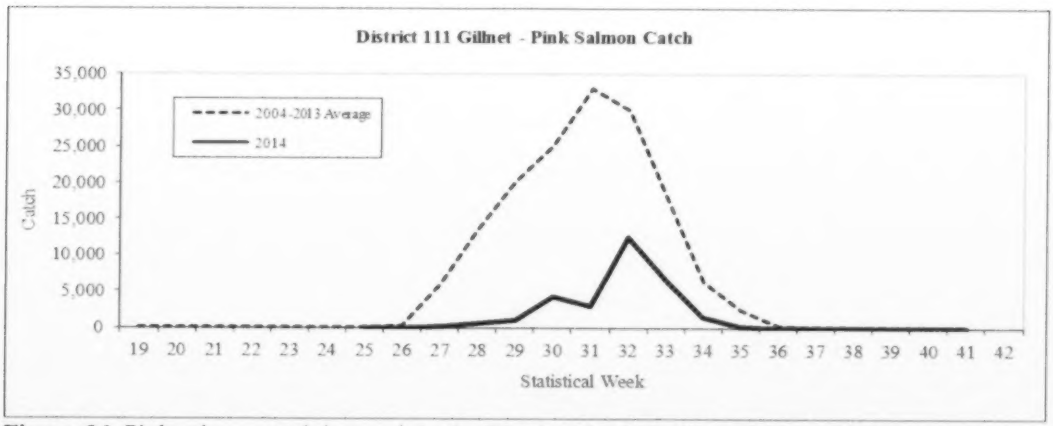


Figure 36. Pink salmon catch by week in the District 111 drift gillnet fishery, 2014.

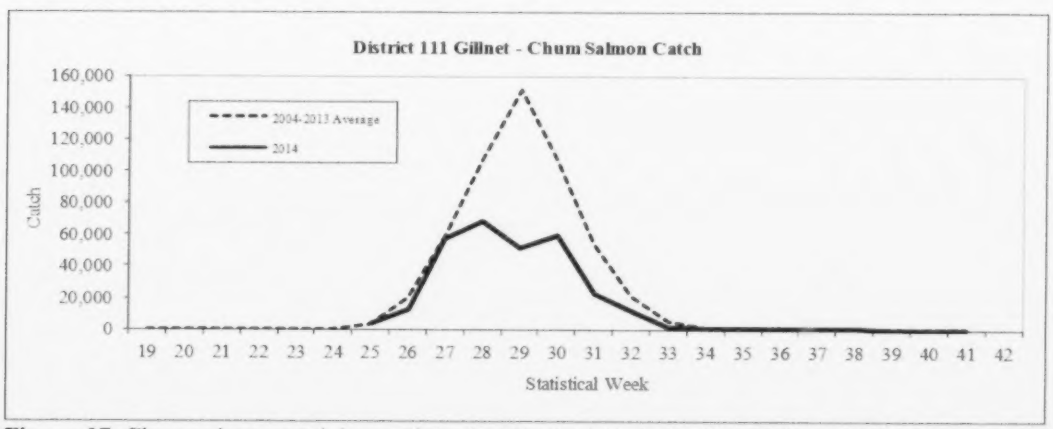


Figure 37. Chum salmon catch by week in the District 111 drift gillnet fishery, 2014.

Transboundary River Joint Enhancement

The transport of sockeye salmon fry from the Snettisham Hatchery facility back to the Canadian lakes took place between May 27 and June 12, 2014. Approximately 3.8 million fry were released in Tahltan, Tuya, and Tatsamenie lakes in Canada. The overall green egg to fry survival of 63.9% for brood year (BY) 2013 releases (Table 9) was near the previous five-year average survival of 60.8% (BY08-BY12) for Tatsamenie and Tahltan fry. Fry from two Tahltan Lake stock incubators and one Tatsamenie stock incubator tested positive this year for IHNV, accounting for a loss of approximately 554 thousand fry prior to transport/back-planting. After the transporting of BY13 fry back to their respective lakes, all TBR modules, incubators, and short-term fry rearing containers were broken down, cleaned, and disinfected prior to setting up to receive green eggs from BY14 egg-takes.

Brood year 2014 egg-takes were initiated on September 5 at Tahltan Lake, September 14 at King Salmon Lake, and September 17 at Tatsamenie Lake. An estimated total of 5.4 million green eggs were collected from the three donor lakes. Tahltan Lake egg-takes were completed on September 27, and an estimated 3.73 million eggs in 12 egg lots were taken. Tatsamenie Lake egg-takes were completed on October 12 and 1.48 million eggs were collected in 4 lots. Escapement at King Salmon Lake was sufficient to allow for egg collection in 2014 and approximately 198,800 eggs were taken. Adult sockeye salmon tissues were collected on the spawning grounds from September 7, 2014 to October 5, 2014 by contractors for DFO and shipped to the ADF&G Juneau Fish Pathology laboratory via Snettisham Hatchery as per treaty agreement.

We note that shortly before the start of the Tahltan Lake egg collection, Canada advised Alaska that they were revising the goal to 5.0 million (from the bilaterally agreed to 6.0 million) because of a decision they had made to stop releases into Tuya Lake; their technical staff had determined that the fry from a 5.0 million level egg take could all be planted into Tahltan Lake without exceeding agreed to stocking guidelines. Egg-take activities were completed with approximately 3.7 million sockeye salmon eggs being delivered to Snettisham Hatchery, which fell short of either egg-take goal. A portion (~500,000) of the shortfall in egg collection was because a bear got into the broodstock the night before the last egg take.

Table 9. Summary of numbers and survival rates of brood year 2013 sockeye salmon fry released May-June 2014. Fish were raised at Snettisham Hatchery as part of the Transboundary River Salmon Enhancement Project.

Brood stock	Release site	Number of trips	Survival rate to eyed stage	Survival rate to release	Number released
Tahltan	Tuya Lk	1	73.8%	65.9%	462,100
Tahltan	Tahltan Lk	4	75.8%	58.7%	2,066,000
Tatsamenie	Upper Tats Lk	3	87.9%	71.1%	1,136,400
Tatsamenie	Extended rearing	2	89.0%	88.1%	185,000
	Average/Totals	10	79.2%	63.9%	3,849,500

During the 2014 season, the ADF&G Thermal Mark Lab processed 19,609 sockeye otoliths collected by ADF&G and DFO staff as part of the U.S./Canada fry-planting evaluation program. These collections came from commercial and test fisheries in both U.S. and Canadian waters on the Taku and Stikine Rivers over a 10-week period. The laboratory provided estimates on hatchery contributions for 87 distinct sample collections. Estimates of the percentage of hatchery fish contributed to commercial fishery catches were provided to ADF&G and DFO fishery managers 24 to 48 hours after samples arrived at the lab.

Alsek River Area Fisheries

Although harvest sharing arrangements of Alsek salmon stocks between Canada and the U.S. have not been specified, Annex IV of the Pacific Salmon Treaty calls for the development and implementation of cooperative abundance-based management plans and programs for Alsek River Chinook and sockeye salmon. Escapement goals are in place for Chinook and sockeye salmon stocks spawning at the Klukshu River, a tributary of the Alsek River. The principal escapement-monitoring tool for Chinook, sockeye, and coho salmon stocks on the Alsek River is the Klukshu River weir, operated by Fisheries and Oceans Canada in cooperation with the Champagne-Aishihik First Nation since 1976. In 2013, Canadian and U.S. biologists adopted a new biological escapement goal range of 7,500 to 11,000 sockeye salmon through the Klukshu River weir. The current biological escapement goal range for Klukshu River Chinook salmon, adopted in February 2013, is a range of 800 to 1,200 fish.

The Department of Fish and Game manages the Alsek River commercial set gillnet fishery to achieve the agreed upon escapement goal ranges. Time and area openings are adjusted by monitoring fishery performance data and comparing it to historical CPUE. The duration of weekly fishing periods is based on fishery performance data (CPUE) and Klukshu River weir data. Historically, gillnets have often been restricted to a maximum mesh size of 6 inches through July 1 to minimize Chinook salmon harvest—the mesh restriction was lifted in 2013 and 2014.

Preseason expectations were for average sockeye salmon and above average Chinook salmon runs in 2014. The overall Alsek drainage sockeye salmon run was expected to be approximately 60,000 fish, which would have been just below the recent ten-year average. The outlook for 2014 was based on a predicted run of 14,600 Klukshu River sockeye salmon, derived from the latest Klukshu River stock-recruitment data, a Klukshu River contribution rate of 23% to the total run (based on mark-recapture results; 2000-04), and run size estimates using GSI (2005-06, 2011). Principal contributing brood years for the 2014 return were 2009 and 2010. The Klukshu River escapement in 2009 was 5,500 sockeye salmon; well below the ten-year average of 15,000 fish. The sockeye salmon escapement in 2010 was 18,960, which was above average. Based on the primary brood year escapements, the outlook for Klukshu River Chinook salmon in 2014 was for a return of 1,900 fish, slightly above the ten-year average of 1,500 fish.

The 2014 Alsek River set gillnet fishery opened Sunday June 1 (week 23). The fishery was extended by one or two days in over half the weeks of the fishery (weeks 23–33) due to high catch rates of sockeye salmon. The overall number of days the fishery was open was below average, but the number of boats fishing during weekly openings was slightly above the recent ten-year average throughout the season and overall effort in boat-days was above average (Table 10). The total number of individual boats fishing during the season was 15, which was below the 2003–2012 average of 19 boats. Catches of Chinook salmon through late June were well above the recent ten-year average (Table 10). Catches of sockeye salmon were well above average in many weeks of the fishery, and catches were over triple the recent ten-year average in weeks 23–25, 27, and 30–31. A total of 33,668 sockeye salmon were harvested, which was 252% of the 2004–2013 average of 13,353 fish (Table 10). There was little effort after early August and none by late August when coho salmon harvests generally increase—only three coho salmon were harvested in 2014 (Table 10).

The Klukshu River weir count of 12,377 sockeye salmon was above the upper bound of the 7,500 to 11,000 fish escapement goal range. The count of 2,732 early run sockeye salmon (count through August 15) and the late run count of 9,645 were both above average. The 842 Chinook salmon counted through the Klukshu River weir was below average, but fell within the established goal range of 800 to 1,200 Chinook salmon.

Table 10. Weekly fishing effort and salmon harvest for Alsek River, 2014.

Statistical Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
23	1-Jun	363	2,517	0	0	0	14	2	28
24	8-Jun	320	3,193	0	0	0	14	2	28
25	15-Jun	312	6,962	0	0	0	13	3	39
26	22-Jun	48	1,371	0	0	0	14	1	14
27	29-Jun	27	6,076	0	0	0	14	3	42
28	6-Jul	0	1,036	0	0	0	10	1	10
29	13-Jul	3	1,157	0	0	0	8	1	8
30	20-Jul	1	6,967	0	0	0	10	3	30
31	27-Jul	0	4,145	0	0	0	10	3	30
32-33[a]	3-Aug	0	244	3	0	12	8	1	7
Total		1,074	33,668	3	0	12	15	20	236
2004-2013 Avg.		440	13,353	1,468	0	5	19	32	193
2014 as % of Avg.		244%	252%	0%	0%	240%	81%	62%	122%

a. Weeks with fewer than three permits, confidential information so data combined in catch table.

Southeast Alaska Chinook Salmon Fishery

All Gear Harvest

The Chinook Technical Committee (CTC) of the PSC determined that the Chinook salmon abundance index for Southeast Alaska in 2014 was 2.57. This abundance index equated to an all-gear harvest limit of 439,400 treaty Chinook, which is approximately 263,400 fish greater than the 2013 quota.

This was the sixth year that the Annex IV, Chapter 3 provisions of the 2009 PST agreement were implemented. Therefore, the harvest limit for SEAK reflects a 15% reduction in allowable catch (AC) from that allowed under the 1999 PST Agreement. The preliminary total Chinook salmon harvest by all Southeast Alaska commercial fisheries, including Alaskan hatchery fish, was 405,560 fish, and the preliminary sport fish harvest was 79,816, for an all-gear harvest of 485,376 (Table 11). The preliminary all-gear treaty harvest was 432,304 fish, which was 1.6% below the all-gear harvest limit of 439,400.

Table 11. Preliminary estimated all gear Chinook salmon harvests in 2014.

2014 Preliminary Estimated All-Gear Chinook Salmon Harvests								
Gear	Total Harvest	AK Hatchery Harvest	Wild Terminal Exclusion	Alaska Hatchery Addon	Treaty Harvest	Quota	O/U	% O/U
Troll	355,570	18,499	736	14,984	339,850	325,411	14,439	4.4%
Sport	79,816	10,034	0	8,506	71,310	81,353	-10,043	-12.4%
Drift Gillnet	22,369	18,658	0	17,465	4,905	12,743	-7,829	-61.5%
Purse Seine	27,378	11,649	0	11,381	15,997	18,894	-2,897	-15.3%
Set Gillnet	243	0	0	0	243	1,000	-757	-75.7%
Total Net	49,990	30,307	0	28,845	21,144	32,637	-11,493	-35.2%
Total All Gear	***485,376***	***58,840***	***736***	***52,336***	***432,304***	***439,400***	***-7,096***	***-1.6%***

Note: Annette Island and terminal area harvests are included.

Table 12. Chinook all gear harvest in Southeast Alaska, 1987 to 2014, add deviation from the ceiling for years in which there were ceilings. Harvest are in thousands.

Year	Total Harvest	Add-on and Exclusion Harvest	Target Treaty Harvest	Treaty Harvest	Deviation Number	Deviation Percent
1987	282.4	17.1	263	265.3	2.3	0.9%
1988	279.3	22.5	263	256.8	-7.8	-3.0%
1989	291.0	21.5	263	269.5	6.5	2.5%
1990	366.9	45.9	302	321	19	6.3%
1991	359.5	61.5	273	298	25	9.2%
1992	258.8	36.8	227.4	222	-5.4	-2.4%
1993	304.1	32.9	263	271.2	8.2	3.1%
1994	264.4	29.2	240	235.2	-4.8	-2.0%
1995	235.7	58.8		176.9		
1996	236.3	81.3		155		
1997	343.0	56.3		286.7		
1998	270.6	27.4	260	243.2	-16.8	-6.5%
1999	251.0	52.2	184.2	198.8	14.6	7.9%
2000	263.3	76.8	178.5	186.5	8	4.5%
2001	265.7	78.8	250.3	186.9	-63.4	-25.3%
2002	426.5	69.4	371.9	357.1	-14.8	-4.0%
2003	439.4	59.3	439.6	380.2	-59.5	-13.5%
2004	506.2	82.2	418.3	417	-1.3	-0.3%
2005	493.1	105.0	387.4	388.1	737	0.2%
2006	435.5	75.9	354.5	359.6	5.1	1.4%
2007	404.6	76.9	259.2	327.7	68.5	26.4%
2008	244.2	71.9	152.9	172.3	19.4	12.7%
2009	293.7	66.1	176.0	227.5	51.5	29.3%
2010	284.7	54.4	215.8	230.3	14.5	6.7%
2011	357.0	66.8	283.3	290.2	6.9	2.4%
2012	295.0	53.0	205.1	242.0	36.9	18.0%
2013	257.2	66.6	176.0	190.7	14.7	8.3%
2014[1]	485.4	53.1	439.4	432.3	-7.1	-1.6%

The actual all gear harvest limit and deviation cannot be calculated until the CTC complete the postseason calibration.

Troll Fishery

The preseason abundance index generated for the SEAK AABM fishery in spring 2014 was 2.57, resulting in a preseason troll allocation of 325,411 treaty Chinook salmon under the harvest management plan adopted by Alaska Board of Fisheries. The accounting of treaty Chinook salmon harvested by trollers begins with the winter fishery and ends with the summer fishery. The winter troll fishery is managed for a guideline harvest level (GHL) of 45,000 non-Alaska hatchery-produced Chinook salmon, with a guideline harvest range of 43,000–47,000 non-Alaska hatchery-produced fish, plus the number of Alaska hatchery-produced Chinook salmon harvested during the winter fishery. The 2013-2014 winter troll fishery was open from October 11, 2013 through April 30, 2014 and harvested a total of 56,507 Chinook salmon. Of these, 5.7% (3,215) were of Alaska hatchery origin, of which 2,572 counted toward the Alaska hatchery add-on, resulting in a treaty catch of 53,935 (Table 13).

The spring troll fisheries target Alaskan hatchery-produced Chinook salmon and are conducted along migration routes or close to hatchery release sites. Terminal area fisheries, which begin during the spring, occur directly in front of hatcheries or at remote release sites. While there is no ceiling on the number of Chinook salmon harvested in the spring fisheries, the take of treaty Chinook salmon is limited according to the percentage of the Alaskan hatchery fish taken in the fishery. In 2014, spring troll fisheries were conducted from May 1–June 30 in a total of 33 spring areas and six terminal area fisheries. A total of 43,830 Chinook salmon were harvested in spring and terminal troll areas combined, of which 10,328 (23.6%) were of Alaska hatchery origin and 8,449 counted toward the Alaska hatchery add-on. There were an additional 736 wild exclusion fish, resulting in a treaty harvest of 34,645 fish (Table 13).

The 2014 summer troll fishery included two Chinook salmon retention periods. From July 1–7, a total of 199,425 Chinook were harvested by 811 permits, of which 3,027 (2%) were of Alaskan hatchery origin and 2,422 counted toward the Alaska hatchery add-on. The resulting treaty catch was 197,003 fish. From August 14–18, a total of 55,678 Chinook were harvested by 654 permits, of which 1,928 were of Alaska hatchery origin and 1,542 counted toward the Alaska hatchery add-on. The resulting treaty catch was 54,136. The total summer harvest included 255,090 Chinook, of which 4,955 were of Alaska hatchery origin, 3,963 counted toward the Alaska hatchery add-on and 251,127 counted as treaty harvest.

Table 13. Preliminary 2014 troll fishery Chinook salmon harvest by season.

Gear/Fishery	Total Harvest	Alaska Hatchery Harvest	Alaska Hatchery Add-on	Terminal Exclusion Harvest	Total Term. Exclusion/ Alaska Hatchery Add-on	Treaty Harvest
Winter Troll	56,507	3,215	2,572	0	2,572	53,935
Spring Troll[a]	43,830	10,328	8,449	736	9,185	34,645
Summer Troll						
First Period	199,425	3,027	2,422	0	2,422	197,003
Second Period	55,678	1,928	1,542	0	1,542	54,136
Total Summer[b]	255,103	4,955	3,963	0	3,963	251,140
Total Traditional Troll	355,439	18,499	14,984	736	15,699	339,719
Annette Is. Troll	131	0	0	0	0	131
Total Troll Harvest	**355,570**	**18,499**	**14,984**	**736**	**15,720**	**339,850**

a. Spring troll harvest includes all terminal and Wild Terminal Exclusion harvests for the year.
b. Total summer harvest includes confiscated harvest for the year.

Net Fisheries

A total of 22,369 Chinook salmon were harvested in the drift gillnet fisheries in 2014, of which 18,658 (83.4%) were of Alaska hatchery origin and 17,465 counted toward the Alaska hatchery add-on, resulting in a treaty harvest of 4,905 fish (Table 11). A total of 27,378 Chinook salmon were harvested in the purse seine fisheries, of which 11,649 (42.5%) were of Alaska hatchery origin and 11,381 counted toward the Alaska hatchery add-on, resulting in a treaty harvest of 15,997 fish. A total of 243 Chinook salmon were harvested in the set gillnet fisheries, none of which were of Alaska hatchery origin, resulting in a treaty harvest of 243 fish (Table 11).

With the exception of directed gillnet harvests of Chinook in SEAK terminal area regulatory Districts 108 and 111 targeting Chinook as provided in the Transboundary River agreement (Chapter 1), harvests of Chinook salmon in the net fisheries are primarily incidental to the harvest of other species and only constituted a small fraction (<1.0%) of the total net harvest of all species.

For the Taku River, the 2014 preseason terminal run forecast of 26,800 large adult Chinook salmon was within the escapement goal range of 19,000-36,000 fish but provided no AC for directed fisheries. In the January 2014 PSC meeting, the Transboundary Rivers Panel asked the Transboundary Technical Committee to consider modifications to the 2014 Taku Chinook mark recapture program to improve reliability and effectiveness while reducing the number of Chinook sampled during the in-river sampling event. Part of that effort was ADFG personnel capturing and marking Chinook salmon using drift gillnets below the US/Canada border to increase the numbers of tagged fish in event 1. The number of fish sampled in the event 2 Canadian inriver assessment fishery was tied to the number of fish tagged in event 1, and the increased numbers of fish released in event 1 would allow a reduction in the numbers of fish required to be sampled in event 2, with the stated goal of reducing the number of fish harvested in the assessment fishery from 1,400 to 1,200. Effort at Canyon Island using set gillnets and fish wheels remained consistent with prior years.

It was agreed in the February preseason TTC meeting in Whitehorse, that any estimates of abundance that generate an allowable catch must be bilaterally agreed to, although the draft annual TTC management plan did not include this detail and was not finalized before the season began. The US drift net marking was successful, and over 800 Chinook were marked, an improvement over the 2013 joint US/DFO non-lethal gillnet effort that marked 624 fish in the traditional fishery area above border. Although the first two week of the season saw average numbers of Chinook caught in the traditional set gillnets and fish wheels, beginning in week 20 catches declined and remained below average for the remainder of the season.

The event 2 Canadian assessment fisheries began in week 19, one week later than customary. Estimates of abundance generated by DFO in weeks 20 and 21 suggested adequate terminal run size to provide an AC, although ADFG research staff did not agree with the sulk rate being used to generate these estimates. In week 22, based on the estimate generated by the tags recaptured from the total harvest of 1,057 large Chinook in the assessment fisheries up to that point, DFO opened a directed fishery for Taku Chinook and harvested nearly 200 large Chinook. Later in that week, the first bilateral estimate of run size was agreed to; estimating a terminal run size of 31,800 large Chinook which did not provide an AC for either country. The Canadian assessment fishery resumed in week 23 to target the remaining 143 fish in the revised assessment target. There was a harvest of 174 large Taku Chinook, and the second bilateral estimate of run strength was generated projecting a terminal run size of 19,600 fish. Accounting for fish harvested in the assessment and directed Canadian fisheries; this estimate projected an escapement below the minimum of the goal range. No further inseason estimates of abundance were developed inseason. In late August after completion of aerial surveys of the spawning beds, the preliminary estimate of spawning escapement was determined to be 11,944 fish, 63% of the minimum of the escapement goal range.

The preseason terminal run forecast of 26,050 large Stikine Chinook salmon resulted in no available U.S. AC. Inseason forecasts ranging between 25,031 and 26,150 large Stikine Chinook salmon were similar to the preseason forecasts and did not result in ACs adequate to prosecute directed sport or commercial fisheries. The initial sockeye salmon gillnet opening was postponed by one week due lower than average Stikine River Chinook and sockeye salmon forecasts, continued low inseason forecasts for Stikine Chinook salmon, and early timing of a potential opening. Area restrictions were implemented during the initial gillnet opening in District 108 due to continued Stikine Chinook salmon concerns. The District 108 commercial gillnet harvest from statistical weeks 25 through 29 was 204 fish based on GSI estimates. The final U.S. harvest of large Stikine Chinook salmon through week 29, including the federal Stikine subsistence fishery, was 1,609 fish. The final postseason estimate of for Stikine River Chinook salmon was approximately 26,150 fish, which did not result in a U.S. AC large enough to prosecute directed commercial fishing; however, the U.S. harvest was below the base level harvest of 3,400 fish.

Recreational Fisheries

The preseason abundance index generated for the SEAK AABM fishery in spring 2014 was 2.57, resulting in a preseason sport allocation of 81,353 treaty Chinook salmon under the harvest management plan adopted by Alaska Board of Fisheries. Based on this pre-season AI and the SEAK King Salmon Management Plan, a resident sport fish angler was allowed to use two rods from October through March, and the bag and possession limit was three king salmon 28 inches or greater in length. The nonresident annual harvest limit was six king salmon 28 inches or greater in length; daily bag and possession limits were one king salmon 28 inches or greater in length except during May and June, when the bag and possession limit was two fish 28 inches or greater in length. The 2014 recreational fishery had an estimated preliminary harvest of 79,816 Chinook salmon, of which 71,310 counted as treaty harvest. The final total and treaty harvest in the sport fishery for 2014 will be available in late fall of 2015.

Southeast Alaska Coho Salmon Fisheries

Attachment B of the June 30, 1999 U.S.-Canada Agreement relating to the Pacific Salmon Treaty specifies provisions for inseason conservation and information sharing for northern boundary coho salmon. In 2014, troll CPUE in Area 6 in the early weeks of the fishery averaged 33.3 coho/day, which was well above the highest boundary area conservation trigger of 22 coho/day. The mid-July projection of region wide total commercial harvest of 2.20 million was greater than the 1.12 million trigger for an early region wide troll closure, specified in Alaska Board of Fisheries regulation and the PST conservation agreement.

The 2014 region wide summer troll coho fishery began on June 1. There was a 4-day (mid-season) closure during August 10–13 and the fishery was extended for 10 days past the normal September 20 ending date. The 2014 all-gear catch of coho salmon was the 4th largest on record and totaled 3.67 million fish, of which 3.40 million (92.7%) were taken in commercial fisheries (Table 14). The troll catch of 2.25 million fish was 42% above the 10-year average of 1.58 million fish and accounted for 66% of the commercial catch. Mean-average weekly power troll wild coho CPUE of 80 fish per boat-day from the second week of July through mid-September was the third highest on record (behind 89 in both 1994 and 2013) and 31% above the 20-year average, while overall wild stock abundance (wild troll catch divided by an index of the troll exploitation rate) was estimated at 6.84 million, the highest on record (slightly surpassing 6.67 million in 1994), and was 72% above the 20-year average. The purse seine harvest of coho salmon (394,200 fish) was 30% above the 10-year average while the drift gillnet harvest of 599,600 fish was 71% above the 10-year average. The set gillnet harvest of 162,000 fish in the Yakutat area was 27% above the 10-year average, with 75% of the catch taken in the Situk-Ahrnklin Lagoon and 23% in the Tsiu River system. A very preliminary estimate of the Southeast Alaska sport catch (267,300) is close to the 10-year average (266,600 fish) and represents the 8th highest sport catch on record.

Wild production accounted for 2.45 million fish (73%) in the commercial catch compared with a recent 10-year average of 1.88 million fish (80% wild). The hatchery percentage of the commercial catch (27.1%) was the 2nd highest on record, behind 28.4% in 2013. Of the estimated hatchery contribution of 912,000 fish, over 99% originated from facilities in Southeast Alaska. Escapement counts and estimates were within or above goal in all cases throughout the region. The total escapement of 4,110 coho salmon to Hugh Smith Lake was highest in 33 years, and the 7th consecutive escapement above the biological escapement goal range (500-1,600 spawners). The estimated total run size of 7,815 adults was the 2nd highest on record and 90% above the long-term average of 4,113 adults. Escapement to Auke Creek was also the highest on record dating back to 1980, while escapement to the Berners River was the 4th highest on record. Ford Arm Creek escapement was above goal and the highest since 2008. The combined peak count of 16,675 coho salmon in the 14 surveyed streams in the Ketchikan area was the second highest on record and well above the goal of 4,250-8,500 spawners.

Marine survival estimates were below the 1990–2013 average for northern Southeast indicators (Auke Creek, Berners River, Ford Arm Creek) but above-average for Hugh Smith Lake in southern Southeast, continuing a recent trend toward higher marine survival in the south that began with a series of low Pacific Decadal Oscillation values during recent sea-entry years since 2008. However, smolt production associated with the 2014 return was relatively high for all of the indicator stocks, following several years of lower production from the Berners River and Ford Arm Creek. Exploitation rate estimates were low to moderate for all indicator stocks except for Ford Arm Creek, where the all-fishery exploitation rate was 74%, compared with the 1982–2010 average of 60%, continuing a recent trend toward higher all-fishery exploitation rates due primarily to increased purse seine exploitation resulting from strong local pink salmon returns. Although the troll fishery exploitation rate on the Ford Arm Creek stock (43%) was below average (51%) its decrease from the long-term average was relatively low compared with other indicator stocks. In contrast, the estimated all-gear exploitation rate on the Hugh Smith Lake stock of 47% continued the trend toward lower all-gear exploitation rates for that system from an average of 75% in the 1990s to 53% during 2000–2013. The Alaska troll fishery exploitation rate on the stock (24%) was below the historical average of 34% from 1982–2013 and the peak decade average of 41% in the 1990s. The Alaska troll fishery exploitation rate on the Auke Creek stock of 14% in 2013 was less than half of the 1980–2013 average (29%) and was the 3rd lowest on record, exceeding only two years (1980 and 1997) when extensive inseason closures were implemented in the stock's migration corridor. The all-gear exploitation rate on that stock was estimated at 20% compared with a long-term average of 39% and a 10-year average of 37%. The low exploitation rate on the Auke Creek stock appears to have resulted primarily from a shift in troll effort and catch away from its migration corridor (in response to the recent pattern of relatively higher abundance in more southern stocks) and low purse seine effort due to a very poor 2014 pink salmon return to northern inside systems.

Table 14. Coho salmon harvest in Southeast Alaska in 2014 by gear type (preliminary).

Gear Type	Harvest
Troll	2,246,900
Purse Seine	394,200
Drift Gillnet	599,600
Set Gillnet	162,000
Sport (marine and freshwater)	267,300
Total	3,670,000

Preliminary 2014 Chinook and Coho Salmon Fisheries in Washington and Oregon

Introduction

This report describes the conduct of United States (U.S.) fisheries of interest to the Pacific Salmon Commission (PSC) that occurred during 2014 in the area north of Cape Falcon, Oregon and south of the U.S./Canada border. These fisheries were conducted under pre-season management plans that were consistent with Annex IV of the Pacific Salmon Treaty (PST 2008) including obligations defined within Chapter 3 for Chinook individual stock based management regimes (ISBM) and Chapter 5 for Southern Coho Management.

An overview of the Chinook (Oncorhynchus tshawytscha) and Coho (Oncorhynchus kisutch) salmon conservation challenges facing managers during the 2014 pre-season planning process in this region is provided. The conduct of major fisheries is described, and estimates of landed catch, where available, are compared to pre-season catch limits or expectations for Chinook (Table 15) and Coho (Table 16). For perspective, landed catches for those fisheries since 2009 are also presented. Where available, preliminary estimates of the number of Chinook or Coho salmon released by anglers in 2014 mark-selective fisheries are also presented. All estimates for the 2014 fisheries are preliminary and subject to change. Estimates of spawning escapements and abundance of Coho and Chinook stocks are not available at this time.

Pre-Season Planning

Pre-season planning for southern U.S. fisheries of interest to the PSC is a coordinated activity involving Tribal, State and Federal management entities, with the involvement of conservation and fishing interests. The Pacific Fishery Management Council (PFMC) conducted a series of public meetings to consider options for ocean fishery season structures while the Tribes and States conducted government-to-government and public, open meetings throughout the region to develop and analyze alternative season structures for fisheries in the inside waters of the Columbia River, coastal Washington and Puget Sound. Participants in these various planning sessions evaluated the biological and socio-economic consequences of the alternative season structures for the outside (ocean) and inside (marine and freshwater) fisheries (Figure 38) including the anticipated impacts on U.S. southern origin stocks in fisheries conducted under the PST in Canada and Southeast Alaska. Agreement was reached on season structures expected to achieve conservation goals, domestic fishery objectives and legal obligations, including the PST, assuming fisheries are conducted as planned and pre-season abundance estimates are accurate.

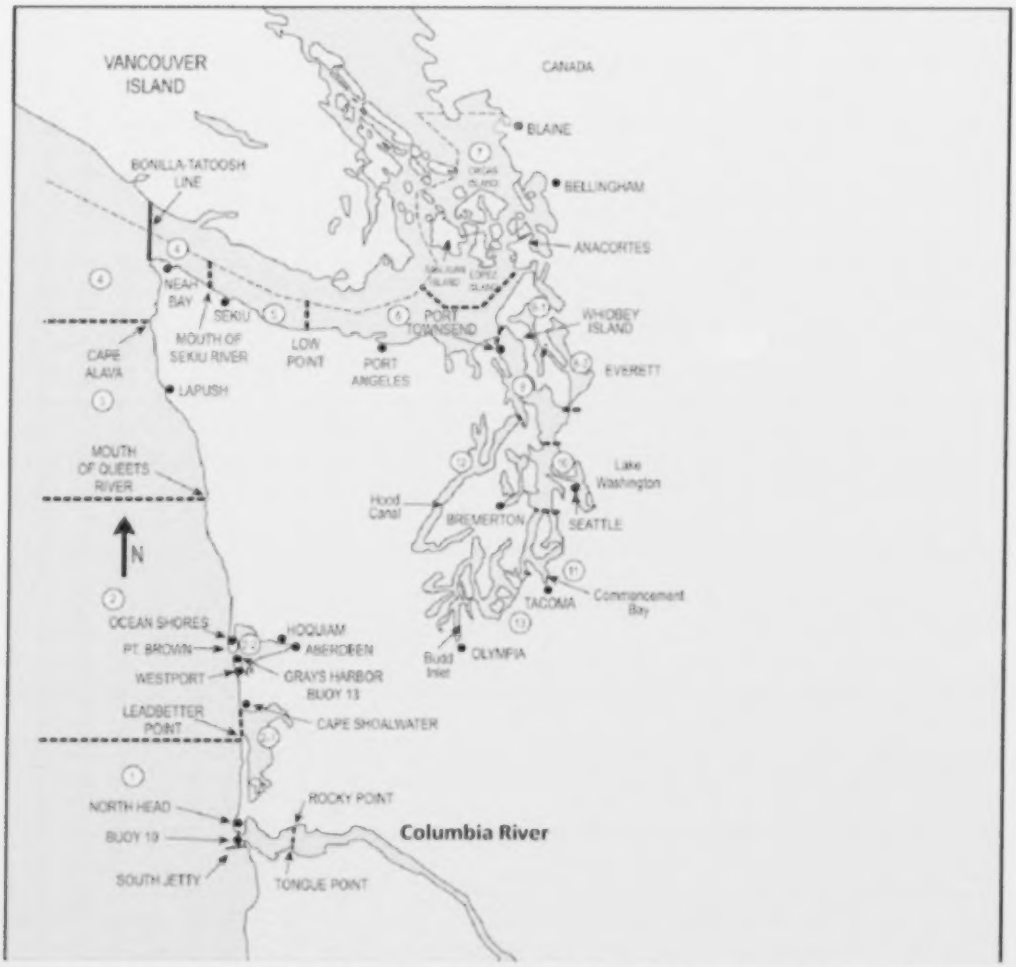


Figure 38. Map of Western Washington marine catch areas of the Washington coast (Areas 1through 4) and Puget Sound (Areas 5 through 13) (WAC 220-22-030).

Chinook Salmon Management

Under the 2008 Pacific Salmon Treaty Agreement, southern U.S. fisheries are subject to the Individual Stock Based Management provisions of Annex IV, Chapter 3. These provisions require the non-ceiling index for aggregated Southern U.S. fisheries on Chinook stocks not achieving their management objectives to be no greater than 60% of the levels estimated for the 1979 – 1982 base period.

Conservation obligations associated with the U.S. Endangered Species Act (ESA) for threatened and endangered Chinook salmon stocks originating from Puget Sound and the Columbia River have been more constraining to southern U.S. fisheries than PST obligations. Catch quotas for the 2014 U.S. ocean fisheries in the area north of Cape Falcon, Oregon, were defined by the impact limits on ESA-listed lower Columbia River natural tule fall Chinook stocks, ESA-listed Puget Sound Chinook stocks, and the abundance of other healthy, harvestable Chinook salmon stocks contributing to fisheries in this area. Puget Sound fishing seasons were structured to provide fishing opportunity on healthy salmon species or stocks within the impact limits defined for ESA-listed Puget Sound Chinook.

Coho Salmon Management

During the pre-season fishery planning process of 2014, Canadian fishery managers informed the U.S. that the Interior Fraser management unit was again expected to be in the low categorical abundance status, and U.S. fisheries were constrained to ensure that the exploitation rate on this management unit did not exceed 10.0% as defined by the PST Southern Coho Management Plan. All U.S. natural spawning Coho management units specified by the PST Southern Coho Management Plan were forecasted to be in moderate or abundant status.

The impact on natural Coho stocks of seasons and catch limits adopted for southern U.S. fisheries were predicted using the Fisheries Regulation Assessment Model (FRAM). The total exploitation rate on the Interior Fraser management unit was predicted to be 10.0% in Southern U.S. fisheries. Seasons and Coho quota levels for U.S. ocean fisheries were constrained primarily by the management objectives of ESA-listed lower Columbia River natural Coho, while limits to fisheries in northern Puget Sound and the Strait of Juan de Fuca were primarily constrained by management objectives for the Interior Fraser Coho management unit

North of Cape Falcon Ocean Fisheries

Fisheries in this area are managed to meet conservation objectives for ESA¬ listed stocks, natural stocks and brood stock goals for hatchery stocks. Within these stock management objectives, ocean fishing seasons are defined that meet legal requirements of Tribal treaties and allocations between Non-Tribal troll and sport fisheries. Ocean fishery seasons are also constructed to ensure a balance of opportunity for harvest with the inside fisheries. Lower Columbia River hatchery Coho and Columbia River hatchery fall Chinook have historically been the major stocks contributing to catches of ocean fisheries in the North of Cape Falcon area.

Chinook and Coho salmon catch quotas were defined for the 2014 ocean Tribal, Non-Tribal troll and sport fisheries. Ocean fishery quotas for Chinook salmon were defined by the total exploitation rate limit of 41% on ESA-listed lower Columbia River natural tule fall Chinook stocks in all fisheries. Ocean fishery quotas for Coho salmon were defined by the impact limits of ESA-listed lower Columbia River natural Coho, Interior Fraser Coho management units, and agreements that allocated the total allowable impacts between ocean and inside fisheries.

Non-Tribal Troll Fishery

Pre-season quota levels for the non-Tribal troll fisheries were 56,900 Chinook and 35,200 Coho (with a clipped adipose fin, hereinafter referred to as marked). The preliminary estimates of non-Tribal harvest in the 2014 North of Falcon troll fishery are 54,454 Chinook (96% of the coast-wide quota), and 23,250 Coho (66% of the coast-wide quota). Trollers harvested 37,086 Chinook in the May 1 – June 30 Chinook-only fishery and the remaining 17,368 Chinook were harvested in the all-species fishery between July 1 and September 17. The Coho catch represents 15,388 harvested in mark-selective fishery and 7,862 harvested in a non-selective fishery from September 5-9 and September 12-16.

Tribal Troll Fishery

The Tribal troll fishery (also known as the Treaty troll fishery) was restricted due to conservation concerns for ESA-listed Lower Columbia River tule Chinook and Mid-Hood Canal Chinook, setting the Chinook quota at 62,500. The Coho quota was constrained by management objectives for Interior Fraser Coho, creating a Coho quota of 57,500. The season was comprised of a May/June Chinook-directed fishery and a July 1 through September 15 all species fishery. The Chinook quota was split 50:50 between the two fisheries. The Chinook-directed fishery ran through all of May and closed on June 30 taking 95% of the

31,250 Chinook sub-quota. The Tribal trollers made 479 landings during this fishery. The all species fishery opened on July 1 with a Chinook sub-quota that was increased by 1,704 Chinook for the underage in the first fishery and to keep the all species fishery Chinook impact neutral on the stocks of concern. This increased the Chinook sub-quota to 32,954 Chinook. The all-species fishery closed on September 15 taking 97% of the Chinook quota and 97% of the Coho quota. The season concluded with a total catch of 61,533 Chinook (99% of the quota) and 55,933 Coho (97% of the quota). The Tribes made 1,009 landings during the ocean Tribal troll season.

Sport Fisheries

Pre-season quotas for the sport fishery were 59,100 Chinook (non-mark-selective equivalent of 54,600) and 184,800 marked Coho. The 59,100 Chinook quota included 9,000 in the May-June mark-selective fishery and 50,100 in the non-selective fishery. Preliminary total catch estimates for the ocean sport fisheries north of Cape Falcon were 42,300 Chinook (72% of the coast-wide quota) and 140,450 Coho (76% of the coast-wide quota). A description of the resulting season structure and catches by management area follows.

U.S./Canada border to Cape Falcon, OR

Sport salmon fishing was open for all species except Coho on May 16-17, May 23-24, and May 31-June 13 from the U.S./Canada border to the Queets River, and from May 31-June 13 between the Queets River and Cape Falcon operating under a coastwide quota of 9,000 marked Chinook. The estimate of landed catch for the coastwide mark-selective sport fishery is 2,100 Chinook (23% of the quota). The Chinook minimum size limit was 24 inches.

Preliminary estimates of Chinook retained and the percentage of legal size Chinook encountered that were retained and released in the Chinook mark-selective sport fishery, May 16 – June 13, 2014, for Areas 1-4 combined.

Chinook retained	Retained %	Released
2,100	77%	630

A detailed report of this fishery, including catch, effort and results of sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2015.

Columbia Ocean Area (including Oregon)

All-species salmon sport fishing opened in Ocean Area 1 (Columbia Ocean Area) on June 14 with a pre-season quota of 92,400 marked Coho and a guideline of 13,100 Chinook. Beginning September 6, the fishery was non-selective for Coho (remaining sub-area Coho quota – 28,500 fish – was converted at an impact neutral rate to a non-selective Coho quota of 10,750; additional transfers of non-selective Coho from the non-Tribal troll fishery and the Neah Bay area sport fishery resulted in a final non-selective Coho quota of 13,100). The fishery closed on September 21. The catch estimates for Area 1 are 10,800 Chinook (82% of the guideline), 63,900 Coho during the mark-selective portion of the fishery (69% of the mark-selective quota), and 11,400 Coho during the non-selective portion of the fishery (87% of the non-selective quota). An additional 600 Chinook were landed in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches, with a sub-area closure in the Columbia Control Zone.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 1 Coho mark-selective sport fishery, June 14 – September 5, 2014.

Coho retained	Coho released	Total encounters	Mark %
63,900	27,200	91,100	70%

Westport, Washington

Ocean Area 2 (Westport, WA) opened for all-species salmon sport fishing on June 14 with a pre-season quota of 68,380 marked Coho and a guideline of 27,600 Chinook. Beginning September 1, the fishery was non-selective for Coho (remaining sub-area Coho quota – 27,000 fish – was converted at an impact-neutral rate to a non-selective quota of 11,400; additional transfers of non-selective Coho from the non-Tribal troll fishery and the Neah Bay area sport fishery resulted in a final non-selective Coho quota of 13,750). The fishery closed on September 19. The catch estimates for Area 2 are 22,300 Chinook (81% of the guideline), 41,400 Coho during the selective portion of the fishery (61% of the mark-selective quota), and 13,400 Coho during the non-selective portion of the fishery (98% of the non-selective quota). An additional 1,200 Chinook were landed in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 2 Coho mark-selective sport fishery, June 14-August 31, 2014.			
Coho retained	Coho released	Total encounters	Mark %
41,400	32,200	73,600	56%

La Push, Washington

Ocean Area 3 (La Push, WA) opened for all-species salmon sport fishing on June 14 with a pre-season quota of 4,800 Coho and a guideline of 2,400 Chinook. The fishery closed on its automatic closure date, September 21, and reopened September 27 through October 12. From September 1-21, the fishery was non-selective for Coho (remaining sub-area Coho quota – 1,500 fish – was converted at an impact neutral rate to a non-selective quota of 500; an additional transfer of non-selective Coho from the Neah Bay area sport fishery resulted in a final non-selective Coho quota of 1,500. The catch estimates for Area 3 are 1,600 Chinook (67% of the guideline) and 3,500 Coho during the mark selective portion of the fishery (74% of the mark selective quota), and 1,100 Coho during the non-selective portion of the fishery (71% of the non-selective quota). An additional 10 Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 3 Coho mark-selective sport fishery, June 14 – September 21 and September 27 – October 12, 2014.			
Coho retained	Coho released	Total encounters	Mark %
3,500	5,900	9,400	37%

Neah Bay, Washington

Ocean Area 4 (Neah Bay, WA) opened for all-species salmon sport fishing on June 14 with a pre-season quota of 19,220 marked Coho and a guideline of 7,000 Chinook. The fishery closed on its automatic closure date, September 21. Beginning September 1, the fishery was non-selective for Coho (remaining sub-area Coho quota – 15,100 fish – was converted at an impact-neutral rate to a non-selective quota of 4,600; a transfer of non-selective Coho from the Neah Bay area sport fishery to the La Push area quota resulted in a final non-selective Coho quota of 1,600). The catch estimates for Area 4 are 5,600 Chinook (81% of the guideline) and 4,200 Coho during the mark-selective portion of the fishery (22% of the mark-selective quota), and 1,550 Coho during the non-selective portion of the fishery (97% of the non-selective quota). An additional 300 Chinook were harvested in the spring mark-selective fishery. The Chinook minimum size limit was 24 inches.

Preliminary estimates of Coho encounters (retained and released), and mark rate in the Area 4 Coho mark-selective sport fishery, June 14 – September 21, 2014.			
Coho retained	Coho released	Total encounters	Mark %
4,200	7,400	11,600	36%

North of Cape Falcon Inside Area Fisheries

Washington Coast River Fisheries

North Washington Coastal Rivers

Net and sport fisheries directed at salmon in this region were implemented based upon pre-season, Tribal-State agreements and subject to in-season adjustments. The 2014 north coastal rivers net harvest (all by Tribal fisheries that are non-selective) includes catch from the Sooes, Quillayute system, Hoh, Queets, and Quinault Rivers. The 2014 commercial Tribal net fisheries in north coastal rivers have harvested an estimated 18,471 Chinook and 96,441 Coho through November 15, 2014.

Recreational fisheries conducted in the Quillayute, Hoh and Queets River systems, included mark-selective fisheries for hatchery Chinook salmon. Recreational fisheries for Coho salmon conducted in the Quillayute River system included mark-selective components. Harvest or impact estimates for these fisheries are unavailable at this time.

Grays Harbor, Washington

Harvest for Grays Harbor, WA includes catch from both the Humptulips and Chehalis Rivers through November 15, 2014. The non-selective Tribal net fisheries in Grays Harbor, and including fisheries in the Humptulips and Chehalis Rivers, harvested an estimated 5,150 Chinook salmon and 63,262 Coho salmon. Although a non-Tribal commercial fishery was open in the northern portion of Grays Harbor near the Humptulips River (Area 2C), no harvest was reported. There were 15 Chinook salmon (mark selective) and 5,500 Coho harvested in the Non-Tribal commercial gillnet fishery in Areas 2A and 2D. Sport fisheries conducted in the Chehalis and Humptulips Rivers included mark-selective components for Chinook and Coho salmon. Harvest data for these fisheries are not available at this time.

Columbia River Fisheries

Tribal and Non-Tribal net and sport salmon fisheries in 2014 occurred during the winter/spring (January – June 15), summer (June 16 – July) and fall (August – October) periods. All fisheries were constrained by impacts on ESA-listed stocks. Winter/spring fisheries were primarily constrained by impacts on ESA-listed upper Columbia River spring Chinook, Snake River spring/summer Chinook and wild winter Steelhead. Summer fisheries were constrained by impacts to ESA-listed Snake River Sockeye. Fall fisheries were mainly constrained by impacts to ESA-listed wild lower Columbia tule fall Chinook and wild lower Columbia River Coho as well as Group B Steelhead which are part of the Snake River Steelhead distinct population segment (DPS). Snake River wild fall Chinook can be a constraint to fall season fisheries, but impacts to other listed stocks generally limit fisheries first.

Columbia River salmon fisheries are developed and regulated to meet conservation standards. Fisheries are managed to operate within the impact limits set for ESA-listed stocks, meet the objectives for healthy Columbia River natural stocks, and ensure brood stock needs are met for hatchery salmon. Mainstem Columbia River fisheries are also developed and managed to remain within the requirements of the 2008 – 2017 US v. Oregon Management Agreement which include Tribal/Non-Tribal sharing agreements. All 2014 data is preliminary and subject to change. This section includes harvest from Columbia River fisheries that are considered to be of the interest to PSC; therefore, the data may not match other reports that include total harvest.

Winter Spring Fisheries

Non-Tribal Net

The mainstem Winter/Spring commercial fishery has operated under mark-selective fishery regulations since 2002. In 2014, the winter/spring salmon season consisted of five fishing periods (51 hours total) between April 1 and June 4. The fishery occurred downstream of Bonneville Dam, with time, area, and gear restrictions in place. Landings included 3,600 hatchery adult spring Chinook.

Sport

Mainstem Columbia River mark-selective sport fisheries began in 2001. The area below Bonneville Dam was open January 1 – April 14, April 19, May 9-10 and May 15 – June 15 for hatchery Chinook retention. Catch estimates include 15,700 hatchery adult spring Chinook. The area from Bonneville Dam upstream to the Oregon/Washington border (17 miles upstream of McNary Dam) was open March 16 – May 9 and May 31-June 15. Catch estimates for this area total 2,800 hatchery adult spring Chinook. The Snake River fishery structure included four specific catch areas open on a days-per-week rotation. The fishery opened in late April and continued into late May. The areas re-opened in early June and continued through June 30. Catch in the Snake River fishery totaled 1,500 hatchery adult spring Chinook.

Tribal

Tribal mainstem fisheries are not mark-selective. Tribal fisheries are conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with various Memorandum of Understanding (MOUs) in the area immediately below Bonneville Dam, but in 2014, the tribes kept this fishery closed during the spring management period. No spring Chinook were harvested in the commercial winter season set-line Sturgeon fishery (January 1 – 31). No Chinook were harvested in the winter gillnet fishery (February 1 – March 21). Ceremonial and subsistence (C&S) fisheries include harvest from platform, hook and line, and gillnet fisheries through Tribal permits. Commercial sales were allowed for platform and hook and line caught fish beginning May 6. Weekly commercial gillnet fisheries began May 20. Harvest estimates from C&S and commercial fisheries total 25,284 upriver spring Chinook. Fisheries are also conducted in Zone 6 tributaries and in Columbia and Snake River tributaries upstream from McNary Dam. Tributary harvest (including Snake Basin harvest) is not reported in this document.

Summer Fisheries

Non-Tribal Net

Summer season commercial fisheries are not mark-selective. Five fishing periods (56 hours total) occurred during June 16 – July 29 in the area below Bonneville Dam. Time, area, and gear restrictions were in place for all summer season commercial fisheries. Landings are estimated at 2,800 upper Columbia summer Chinook.

Sport

Summer season fisheries were mark-selective for upper Columbia summer Chinook. The area below Bonneville Dam was open for adult Chinook retention during June 16-30, July 3-6 and July 11-31. An estimated 2,000 hatchery Chinook were retained below Bonneville Dam. The area from Bonneville Dam upstream to Priest Rapids Dam was open for adult hatchery Chinook retention from June 16 – July 31. An estimated 400 adult hatchery Chinook were retained in this area.

Tribal

Treaty Tribal fisheries are not mark-selective. Treaty Tribal fisheries are conducted in the mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with various MOUs in the area immediately below Bonneville Dam. Seven weekly commercial gillnet fishing periods were conducted June 16 – July 31. Platform and hook and line fisheries also occurred throughout the season, and fish were sold commercially or retained for subsistence use. Harvest estimates total 19,389 adult upper Columbia summer Chinook from mainstem fisheries. Minor summer season fisheries were also conducted in some Zone 6 tributaries and in tributaries upstream of McNary Dam. Tributary harvest is not reported in this document.

Fall Fisheries

Non-Tribal Net

Fall season mainstem fisheries are typically categorized into early and late fall seasons. The early fall season generally encompasses the month of August, whereas the late fall season generally begins in mid-September and continues through October. Time, area, and gear restrictions were in place for all fall season commercial fisheries. In 2014 the early fall season consisted of 1-3 periods per week during August 3 – September 2. The late fall season consisted of 1-5 periods per week during September 14 – October 31. A research (MSF) fishery using seine gear was also implemented. The fishery occurred during Aug 3- Sep 24. Harvest estimates total 102,000 fall Chinook for the entire season.

Sport

Fall season fisheries are mark-selective for Coho and in recent years have included a brief mark-selective period for Chinook in the Buoy 10 area and in an 80-mile stretch in the lower Columbia River. The Buoy 10 fishery was open August 1- December 31; Chinook retention was allowed August 1 – September 1 and October 1 – December 31 (with mark-selective regulations in place during August 30-September 1). Buoy 10 catch estimates include 26,900 Chinook and 56,300 hatchery Coho. The mainstem sport fishery from the Rocky Point – Tongue Point line upstream to Bonneville Dam was open August 1 – December 31. In the area from the Rocky Point – Tongue Point line upstream to the Lewis River, mark selective rules for Chinook were in effect September 7 – 14; then the area closed for Chinook retention during September 15-30. Catch estimates for the fishery downstream of Bonneville Dam include 27,100 Chinook. The mainstem sport fishery from Bonneville Dam to the Highway 395 Bridge (near Pasco, Washington) was open August 1 – December 31. Catch estimates include 9,200 fall Chinook.

Tribal

Tribal fisheries are not mark-selective. Tribal fisheries are conducted in mainstem Columbia River from Bonneville Dam upstream to McNary Dam (Zone 6). Platform and hook and line fisheries also occur in accordance with various MOUs in the area immediately below Bonneville Dam. Platform and hook and line fisheries were open and allowed commercial sales through October 9. The commercial gillnet fishery consisted of eight weekly fishing periods August 19 – October 3. Preliminary harvest estimates total 259,680 adult fall Chinook. Fisheries are also conducted in some Zone 6 tributaries and in the Snake and Clearwater Rivers. Harvest of chinook in tributary fisheries is not reported in this document.

Puget Sound Fisheries

In 2014, Puget Sound marine fisheries of interest to the Pacific Salmon Commission were regulated to meet conservation and allocation objectives for Chinook, Coho, Chum and Sockeye salmon stocks, per Tribal-State agreement. For Puget Sound Chinook listed under the ESA, fisheries were managed according to the

Puget Sound Chinook Harvest Management Plan (PSIT and WDFW 2010). This management plan defines limits to total exploitation rates for natural stocks and was determined by the National Marine Fisheries Service (NMFS) to be consistent with requirements specified under the ESA 4(d) Rule.
Release requirements were applied to many sport and net fisheries for Chinook, Coho, and Chum salmon, the latter to protect ESA-listed Hood Canal and Strait of Juan de Fuca summer Chum.

Puget Sound marine fisheries were constrained by the need to meet management objectives for ESA-listed Puget Sound Chinook, including Lake Washington, Nisqually, Skokomish, and Puyallup River Chinook. Interior Fraser Coho was the primary Coho management unit of concern for managing fisheries in the Strait of Juan de Fuca and northern Puget Sound.

Strait of Juan de Fuca Sport

Non-selective Chinook retention was allowed for sport fishing in salmon management Area 5 from February 16 – April 10 and selective retention in Area 6 from December 1, 2013 – April 10, 2014. Sport fishing regulations allowed retention of marked Chinook and marked Coho beginning July 1 in Areas 5 and 6. Chinook mark selective fishing opportunity was limited to the period through August 15. The sport fishery remained open to a Coho mark selective opportunity through September 18 and September 26 – October 31 in Area 5 and through September 30 in Area 6. Wild Coho retention was legal September 19 – 25 in Area 5 and October 1 – 31 in Area 6. Selective retention of Chinook was legal in Area 5 and non-selective retention in Area 6 from October 1 – 31. An additional mark-selective fishery for Chinook is open from December 1 – 31, 2014 in Area 6. The preliminary estimate for Area 5 Chinook retained for the entire open fishing period July 1 – October 31 was 5,241 fish. A preliminary estimate of Coho retained for the mark-selective and non-selective open periods was 29,165 fish.

Preliminary estimates of Chinook retained, released (legal and sub-legal size), and the legal-size mark rate in the Area 5 sport mark-selective fishery, July 1 – August 15, 2014.			
Chinook retained	Chinook released	Total encounters	Mark % (legal size)
5,136	16,485	21,621	48%

Preliminary estimates of Coho retained, released and the mark rate in the Area 5 Coho mark-selective sport fishery, July 1 – September 18 and September 26-October 31, 2014.			
Coho retained	Coho released	Total encounters	Mark %
16,078	22,546	38,625	44%

A detailed report of this summer period sport fishery, including catch, effort and results of sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in early 2015.

Strait of Juan de Fuca Tribal Troll (Area 4B, 5, and 6C)

During the winter Tribal troll fishery in Areas 4B, 5, and 6C (November 1, 2013 – April 15, 2014), 4,300 Chinook and 14 Coho were caught. In the summer Tribal troll fishery in Areas 5 and 6C only (June 1 – September 30, 2014), 701 Chinook and 1 Coho were caught. The Tribal catch estimates from this area do not include catches from Area 4B during the May-September PFMC management period, which have been included in the North of Cape Falcon Tribal ocean troll summary.

Strait of Juan de Fuca Tribal Net

Preliminary estimates of the 2014 catch in the Strait of Juan de Fuca Tribal net fisheries (no non-Tribal net fisheries in the Strait of Juan de Fuca) are 1,100 Chinook and 2,300 Coho salmon.

San Juan Islands Net (Areas 6, San 7, and 7A)

Preliminary estimates of the 2014 catch in the San Juan Island net fishery directed at Sockeye or Chum salmon total 2,100 Chinook and 3,300 Coho salmon for the Non-Tribal fishery. Tribal fishery landings from this area for all gear types total 6,500 Chinook and 19,200 Coho.

San Juan Islands (Area 7) Sport

Marked Chinook retention was allowed in the entire area for the period December 1, 2013 – April 30, 2014. The numbers of Chinook retained and released by anglers during this fishery were estimated by an intensive sampling program and are presented in the table below. A detailed report of this fishery, including catch, effort and results of sampling and monitoring programs, is available from the Washington Department of Fish and Wildlife. The southern and southeastern (Rosario Strait) portions of this catch area were again closed July 1 – September 30 to protect Puget Sound Chinook salmon. The remaining area was open for retention of Chinook and Coho salmon from July 1 – October 31. Release of unmarked Coho salmon was required for the months of August through October and for unmarked Chinook during October. Additional sub area closures are described in the Washington State Sport Fishing Rules Pamphlet. Catch estimates and sampling information for this area for the period May 1 – November 30 are not available at this time.

Estimated Chinook retained, released (legal and sub-legal size) and the legal size mark rate in the Area 7 sport mark-selective fishery, December 1, 2013 – April 30, 2014.

Chinook retained	Chinook released	Total encounters	Mark % (legal size)
3,456	3,527	6,982	78%

Inside Puget Sound (Areas 8-13) Sport

Mark-selective sport fisheries directed at hatchery Chinook were conducted in Area 8.1 (Skagit Bay & Saratoga Passage), Area 8.2 (Port Susan & Port Gardner), Area 9 (Admiralty Inlet), Area 10 (Seattle – Bremerton), Area 11 (Tacoma), and Area 12 (Hood Canal) during the winter (October, 2013 – April, 2014) period, and in Areas 9, 10, 11, 12, and 13 (South Puget Sound) during the summer (May – September, 2014) period.

Detailed reports of these fisheries, including retained and released encounters, effort and mark rates from sampling and monitoring programs, will be available from the Washington Department of Fish and Wildlife in the spring of 2015.

Mark-selective sport fisheries directed at hatchery Coho were conducted in Area 13 for the period July 1 to October 31, 2014.

Puget Sound Chinook mark-selective sport fisheries conducted in marine areas during the period October 1, 2013 through December 31, 2014.

Areas	Season
8.1 & 8.2	November 1, 2013 – April 30, 2014
9	November 1-30, 2013; Jan 16 – April 15, 2014; July 16 – August 15, 2014; and November 1-30, 2014
10	October 1, 2013 – January 31, 2014; July 16 – August 8, 2014; and October 1 – December 31, 2014
11	February 1 – April 30, 2014 and June 1 – December 31, 2014
12	February 1 – April 30, 2014 and July 1 – December 31, 2014
13	May 1 – December 31, 2014

Puget Sound Marine Net (Areas 8-13 & 7B-D

Tribal net and non-Tribal sport fisheries directed at salmon in this region were implemented based upon pre-season, Tribal-State agreements and subject in part to in-season adjustment. The Net harvest (in Puget Sound Rivers by Tribal fisheries) included catch from river systems in the Strait of Juan de Fuca, Hood Canal, and Puget Sound. A total of 18,800 Chinook and 41,900 Coho were landed in Puget Sound River net fisheries during 2014.

Mark selective fisheries directed at Chinook salmon were also conducted in the following Puget Sound Rivers with PSC Chinook coded wire tag (CWT) exploitation rate indicator stocks or double index tag (DIT) groups:

Chinook mark-selective sport fisheries conducted in Puget Sound Rivers, 2014.	
River	Season
Nooksack River	September 1 - 30
Cascade River (Skagit)	June 1 – July 15
Skagit River	June 1 – July 15
Skykomish River	June 1 – July 31
Nisqually River	January 1 – 31; July 1 – September 22; and October 14 - December 31
Skokomish River	August 1 – September 1

A Coho mark-selective fishery occurred on the Skagit River from September 1 – December 31, 2014. During 2014, no other mark-selective sport fisheries were conducted in any Puget Sound Rivers with PSC Coho CWT exploitation rate indicator stocks or DIT groups.

References

Pacific Salmon Treaty (PST) Act of 1985. 2008 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

Puget Sound Indian Tribes and Washington Department of Fish & Wildlife (PSIT and WDFW). 2010. Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component. Northwest Indian Fisheries Commission, Olympia, Washington. 237 p.

Pacific Fishery Management Council (PFMC). 2008. Fishery Regulation Assessment Model (FRAM): An Overview for Coho and Chinook v3.0. Pacific Fishery Management Council, Portland, Oregon. 43 p

Table 15. Preliminary 2014 Landed Chinook Catches for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission. Values are presented in number of fish rounded to the nearest 100.

FISHERIES	2014 Preseason [13] Total Mortality [1]	2014 Preseason [13] Landed [2]	2014 Preliminary Landed	Landed 2013	Landed 2012	Landed 2011	Landed 2010	Landed 2009
OCEAN FISHERIES								
Commercial Troll								
Neah Bay and La Push (area 3,4,4B) [3]	100,000	81,000	77,000	63,700	80,000	42,900	39,600	15,700
Columbia Ocean Area and Westport (area 1,2)	60,600	38,400	39,000	26,300	12,200	17,300	49,000	9,600
Sport (see text for quota information)								
Neah Bay (area 4) [4]	9,200	7,600	5,900	6,200	5,600	3,000	3,300	2,400
La Push (area 3) [4]	3,200	2,600	1,600	2,400	1,300	1,500	1,200	700
Westport (area 2) [4]	41,600	35,000	23,500	13,700	19,500	19,100	27,000	5,000
Columbia Ocean Area (area 1) [4]	19,900	14,000	11,400	8,600	9,100	7,200	7,200	5,200
INSIDE FISHERIES								
Sport [10]								
Strait of Juan de Fuca (area 5,6) [5]	19,400	12,800	5,100	15,000	13,900	9,500	9,100	10,200
San Juan Islands (area 7)	9,600	8,100	na	9,500	5,800	6,500	3,600	4,200
Puget Sound (area 8-13)	28,300	15,000	na	17,300	22,000	11,600	15,600	16,900
Puget Sound Rivers [12]	23,200	20,200	na	21,300	23,200	18,200	15,600	14,400
North WA Coastal Rivers	na	na	na	3,000	1,600	2,300	1,300	900
Grays Harbor [7]	na	na	3,300	3,900	4,600	3,400	2,200	900
Columbia River (Spring) [6]	na	na	20,000	7,900	16,600	15,900	34,700	18,100
Columbia River (Summer) [6]	na	na	2,400	1,800	3,200	5,600	3,400	2,600
Columbia River (Fall) (incl. Buoy 10) [6]	na	na	63,200	68,500	47,100	44,300	29,500	24,000
Commercial [11]								
Strait of Juan de Fuca net and troll (area 4B,5,6C)	7,400	6,500	6,000	4,000	4,000	4,300	4,400	4,000
San Juan Islands (area 6,7,7A)	8,000	7,900	8,600	4,000	400	5,500	6,800	1,000
Puget Sound Marine (area 8-13;7B-D)	46,900	45,900	30,900	81,900	80,700	71,700	49,200	47,400
Puget Sound Rivers [12]	56,400	56,400	18,800	26,800	39,500	35,200	38,400	34,500
North WA Coastal Rivers	na	na	18,500	14,400	12,500	11,800	9,000	10,500
Grays Harbor (area 2A-2D) [7]	na	na	5,200	2,900	5,300	8,300	4,600	3,400
Columbia River Net (Winter/Spring) [8]	na	na	28,800	11,200	23,800	20,100	52,000	17,300
Columbia River Net (Summer) [8]	na	na	22,200	15,300	9,500	25,700	20,500	14,000
Columbia River Net (Fall) [8]	na	na	361,700	312,500	119,800	183,600	163800	133,600

Table 15 Footnotes

1/ Nominal total mortality is not adjusted for adult equivalents (AEQ) and does include non-retention mortality. Total Mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

2/ For the ocean fisheries, this column shows the Chinook troll and recreational quotas used for 2014 pre-season fishery planning as distributed by ocean area. Pre-season total troll quota is 119,400 and recreational Chinook quota 59,100. See text for any in-season adjustments.

3/ Includes Area 4B catch during the PFMC management period (May 1 – September 15). Area 4B Treaty troll catch outside PFMC period included under Strait Juan de Fuca net and troll (October-April).

4/ Includes catch from the spring mark selective fishery.

5/ 2014 catch represents July 1 – August 24 in Area 5 only, since Catch Record Card (CRC) annual estimates are not yet available.

6/ Mainstem retained sport catch only (upstream to McNary Dam for spring, Priest Rapids Dam for summer and upstream to Hwy 395 for fall). See tables 22 – 23 in the annual Joint Staff Report regarding spring and summer Chinook and tables 29 – 31 in the annual fall report. http://wdfw.wa.gov/fishing/crc/staff_reports.html.

7/ Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers and their tributaries for sport and Chehalis and Humptulips Rivers for net estimates.

8/ Mainstem retained catch only, includes tribal ceremonial and subsistence (C&S) and commercial for all gear types and non-tribal (Columbia River mouth upstream to McNary Dam). Catch data from annual Joint Staff Reports. Winter and spring catch is from T7 and T18. Summer catch is from T10. Fall catch from annual fall report T20, 24 and 26.

9/ Includes catch from mark-selective fisheries as shown in table 3.

10/ Sport data after March 2013 are preliminary.

11/ Includes Non-Tribal and Tribal commercial and take home, as well as Tribal Ceremonial and Subsistence for all gear types. Starting in 2012, the Copalis, Moclips, and Ozette Rivers have been removed from the landed catch.

12/ Chinook fisheries in Puget Sound Rivers are modeled using the Terminal Area Management Module (TAMM), based upon FRAM output of terminal run sizes. Total Mortality is estimated in TAMM as catch + non-retention mortality (PFMC 2008).

13/ FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Chinook defined as May 1 through April 30.

Table 16. Preliminary 2014 Landed Coho Catches for Washington and Oregon Fisheries of Interest to the Pacific Salmon Commission. Values are presented in number of fish rounded to the nearest 100.

	2014			Landed				
	Preseason [9]							
FISHERIES	Total Mortality [1]	Landed [2]	Preliminary Landed	2013	2012	2011	2010	2009
OCEAN FISHERIES								
Commercial Troll								
Neah Bay and La Push (area 3,4,4B) [3]	67,200	60,700	60,100	48,500	38,600	14,200	9,600	64,200
Columbia Ocean Area and Westport (area 1&2)	44,800	32,000	19,100	4,800	2,100	8,600	5,000	29,200
Sport (see text for quota information)								
Neah Bay (area 4)	24,000	19,200	5,800	6,500	7,500	3,100	3,700	13,300
La Push (area 3)	5,800	4,800	4,600	2,800	2,200	2,100	1,200	6,900
Westport (area 2)	81,300	68,400	54,800	20,400	12,000	13,800	12,600	53,900
Columbia Ocean Area (area 1)	105,800	92,400	75,300	20,500	11,400	26,700	24,900	83,800
INSIDE FISHERIES								
Sport [7]								
Strait of Juan de Fuca (area 5,6) [4]	43,000	36,800	9,300	54,500	76,300	21,400	13,600	32,900
San Juan Islands (area 7)	800	700	na	2,600	2,200	900	600	800
Puget Sound Marine (area 8-13)	38,700	36,800	na	72,400	91,500	34,500	6,000	42,000
Puget Sound Rivers	32,600	31,000	na	69,400	43,300	40,400	9,600	41,200
North WA Coastal Rivers	5,000	4,800	na	8,000	3,400	7,900	5,800	7,200
Grays Harbor [5]	17,700	16,900	19,100	21,200	18,300	14,600	12,500	16,100
Columbia River Buoy 10	58,000	50,000	56,300	7,600	7,400	7,600	8,000	48,100
Commercial [8]								
Strait of Juan de Fuca net and troll (area 4B,5,6C)	5,300	5,200	2,300	2,700	3,600	2,800	3,200	2,900
San Juan Island (area 6,7,7A)	8,800	6,200	22,500	19,000	10,500	11,300	4,800	6,400
Puget Sound Marine (area 8-13,7B-D)	206,300	202,200	126,800	237,400	138,000	102,400	173,600	147,400
Puget Sound Rivers	90,600	88,800	41,900	136,600	132,800	101,000	62,700	89,700
North WA Coastal Rivers	52,500	51,500	97,600	44,000	38,300	82,900	95,300	124,300
Grays Harbor (area 2A-2D) [5]	57,600	56,400	68,800	30,400	44,000	32,400	31,100	28,200

Table 16 Footnotes

1/ Estimates of total mortality include non-retention mortality. Total Mortality is estimated by Fishery Regulation Assessment Model (FRAM) as catch + incidental mortality, where incidental mortality = drop off + non-retention mortality (PFMC 2008).

2/ For ocean fisheries this column shows the Coho troll and recreational quotas used for 2014 pre-season fishery planning as distributed by ocean area. Pre-season total troll quota is 92,700 and recreational marked Coho quota is 184,800. See text for any in-season adjustments.

3/ Includes area 4B catch during the PFMC management period (May 1 – September 15); area 4B Treaty troll catch outside PFMC period included under Strait Juan de Fuca net and troll (October-April).

4/ 2014 catch represents selective fisheries July 1 through August 24 in area 5 only, since catch record cards (CRC) annual estimates are not yet available.

5/ Includes Grays Harbor catch, as well as catch from the Chehalis and Humptulips Rivers; their tributaries are included in sport estimates only.

6/ Includes catch from mark-selective fisheries where estimates are available.

7/ Sport data after March 2013 are preliminary.

8/ Includes Non-Tribal and Tribal commercial and take home, as well as Tribal ceremonial and subsistence (C&S) for all gear types. Starting in 2012, the Copalis, Moclips, and Ozette Rivers have been removed from landed catch.

9/ FRAM modeled pre-season fishery impacts cover the current fishery planning year, for Coho defined as January 1 through December 31.

Table 17. Mark Selective Chinook and Coho Fisheries by Area and Year. "Yes" denotes that a mark selective fishery occurred, even if it only occurred in a subset of the fishing area, season, gear type, or user group.

Selective Coho	2014	2013	2012	2011	2010	2009	2008	2007
Ocean Troll								
Cape Flattery & Quillayute (Areas 3/4)	yes	yes	yes	yes	yes	yes	yes	yes
Columbia R & Grays Harbor (Areas 1 & 2)	yes	yes	yes	yes	yes	yes	yes	yes
Ocean Sport								
Neah Bay (Area 4)	yes	yes	yes	yes	yes	yes	yes	yes
La Push (Area 3)	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Area 2)	yes	yes	yes	yes	yes	yes	yes	yes
Col. R. (Leadbetter Pt. to Cape Falcon)	yes	yes	yes	yes	yes	yes	yes	yes
Inside Fisheries								
Sport								
Juan de Fuca (Areas 5 & 6)	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (7)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Sport (Areas 8-13 all year)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	no	yes	yes	yes	no
Columbia River Buoy 10	yes	yes	yes	yes	yes	yes	yes	yes
Commercial								
North WA Coastal Rivers	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	yes	no	no	yes	yes	yes	no	no
Columbia River Net/ - Fall	yes	yes	no	no	no	no	no	no
Strait of Juan de Fuca (Areas 4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Marine (Areas 8 - 13)	no	no	no	no	no	no	yes	no
Puget Sound Rivers	no	no	no	no	no	no	no	no
Selective Chinook	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**
Ocean Troll								
Cape Flattery & Quillayute (Areas 3/4/4B)	no	no	no	no	no	no	no	no
Columbia. R & Grays Harbor (Areas 1&2)	no	no	no	no	no	no	no	no
Ocean Sport								
Neah Bay (Area 4)	yes	yes	yes	yes	yes	no	no	no
La Push (Area 3)	yes	yes	yes	yes	yes	no	no	no
Grays Harbor/Westport (Area 2)	yes	yes	yes	yes	yes	no	no	no
Col. R./Ilwaco (Leadbetter Pt. to Cape Falcon)	yes	yes	yes	yes	yes	no	no	no
Inside Fisheries								
Sport								
Juan de Fuca (Area 5&6)	yes	yes	yes	yes	yes	yes	yes	yes
San Juan Islands (Area 7)	yes	yes	yes	yes	yes	yes	no	no
Puget Sound Sport (Areas 8-13)	yes	yes	yes	yes	yes	yes	yes	yes
Puget Sound Rivers	yes	yes	yes	yes	yes	yes	yes	yes
North WA Coastal Rivers	yes	yes	yes	yes	yes	yes	yes	yes
Grays Harbor (Areas 2-2)	yes	yes	yes	no	no	no	no	yes
Columbia River Sport - Winter/Spring	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Sport - Summer	yes	yes	yes	yes	yes	no	no	no
Columbia River Sport - Fall	yes	yes	yes	no	no	no	no	no
Commercial								

North WA Coastal Rivers	no	no	no	no	no	no	no	no
Grays Harbor (Areas 2A-2D)	yes	yes	yes	no	no	no	no	no
Columbia River Net-Winter/Spring	yes	yes	yes	yes	yes	yes	yes	yes
Columbia River Net - Summer	no	no	no	no	no	no	no	no
Columbia River Net - Fall	yes	yes	no	no	no	no	no	no
Strait of Juan de Fuca(4B/5/6C) Net & Troll	no	no	no	no	no	no	no	no
San Juan Islands (Areas 6, 7 & 7A)	yes	yes	yes	yes	yes	yes	yes	no
Puget Sound Marine (Areas 8 - 13)	no	no	no	yes	yes	no	no	no
Puget Sound Rivers	yes	yes	yes	yes	no	no	no	no

Preliminary Review of the 2014 Washington Chum Salmon Fisheries of Interest to the Pacific Salmon Commission

This summary report provides a preliminary review of the 2014 U.S. Chum salmon (Oncorhynchus keta) fisheries conducted by Puget Sound salmon co-managers (Puget Sound Treaty fishing tribes and the State of Washington) in the Strait of Juan de Fuca (Salmon Management and Catch Reporting Areas 4B, 5 and 6C), the San Juan Islands (Areas 6 and 7) and the Point Roberts area (Area 7A) (Figure 39), conducted in compliance with provisions of Chapter 6 of Annex IV of the Pacific Salmon Treaty (PST 2008). The harvest and abundance information provided are based on preliminary data reported through November 15, 2014 and is subject to correction and revision as additional information becomes available.

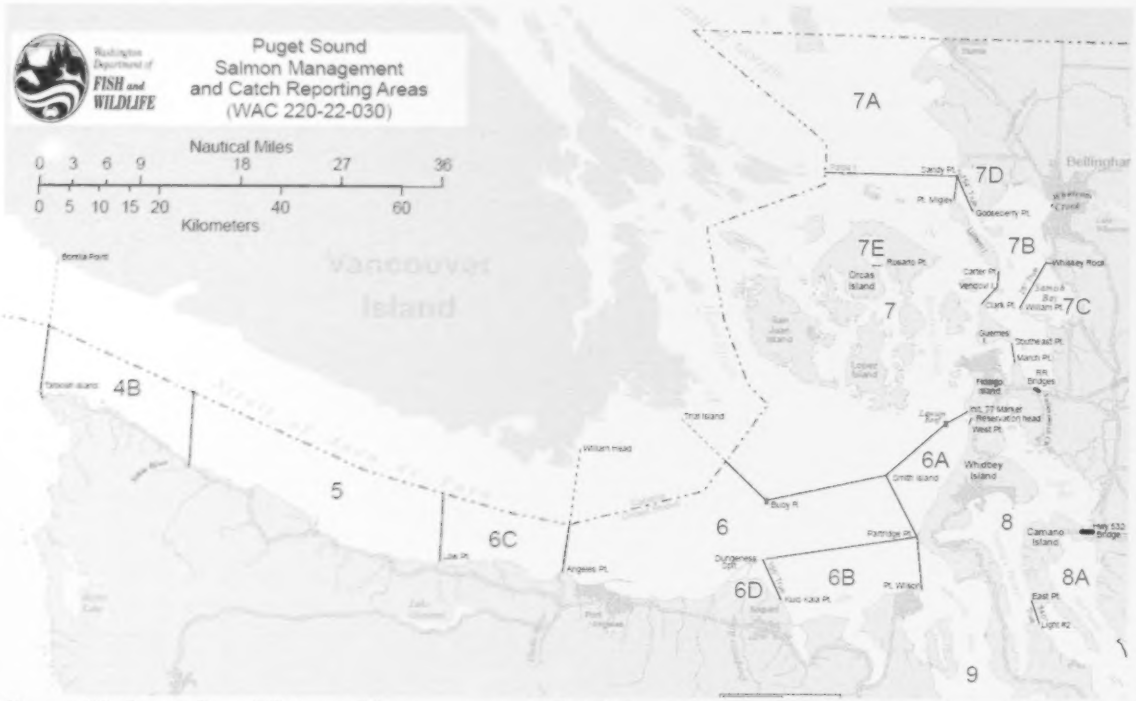


Figure 39. Puget Sound Salmon Management and Catch Reporting Areas with chum salmon fisheries to the Pacific Salmon Commission.

Mixed Stock Fisheries

Areas 4B, 5 and 6C

As in previous years, the Chum salmon fishery in Areas 4B, 5 and 6C was restricted to Treaty Indian fishers using gillnets. The fall Chum-directed salmon fishery opened the week of October 12, with a schedule of six days per week and continued through November 8. Just 640 Chum salmon were harvested during this period. However, including incidental catches of Chum salmon prior to the Chum-directed fishing season, a total of 3,695 Chum salmon were harvested (Table 18). During the fall Chum fisheries in Areas 4B, 5, and 6C, there was a reported by catch of 1,072 Coho, 8 Chinook, and zero Steelhead.

Table 18. Preliminary 2014 chum salmon harvest report for Washington salmon catch reporting areas 4B, 5, 6C

Areas 4B, 5, 6C	
Treaty Indian, Gill Net Only	
Time Periods	GN
Through 9/20	65
9/21-9/27	0
9/28-10/4	0
10/5-10/11	2,990
10/12-10/18	584
10/19-10/25	56
10/26-11/1	0
11/2-11/8	0
11/9-11/15	0
Total	3,695

Areas 7 and 7A

Chum salmon fisheries in Areas 7 and 7A are regulated to comply with a base harvest ceiling of 130,000 Chum salmon, unless a critically low level of abundance is identified for those stocks migrating through Johnstone Strait ("Inside Southern Chum salmon") (PST 2008). Chapter 6 of Annex IV specifies that U.S. commercial fisheries for Chum salmon in Areas 7 and 7A will not occur prior to October 10. Paragraph 10 (a-b) specifies run sizes below 1.0 million as critical (estimated by Canada). For run sizes below the critical threshold, the U.S. catch of Chum salmon in Areas 7 and 7A will be limited to those taken incidentally to other species and in other minor fisheries, and shall not exceed 20,000. U.S. commercial fisheries during 2014 were initiated on October 10.

Paragraph 10 (d) states that Canada will provide an estimate of Fraser River Chum salmon run size no later than October 22. If that estimate is below 900,000, then the U.S. will limit its fishery to not exceed a catch of 20,000 additional Chum salmon from the day following notification. An estimated Fraser River Chum salmon run size of 1,329,000 was provided by Canada on October 21. Paragraph 10(d) goes on to state that the total catch is not to exceed 130,000 Chum Salmon. The fishery was therefore continued through October 29. Total U.S. catch between October 10 and October 29 in Areas 7 and 7A was 143,191 Chum salmon. The Non-Treaty gillnet and purse seine fleets were open daily October 11, 12, 14 and then continuously October 17 through October 29. The Treaty Indian gillnet and purse seine fisheries were opened on October 10 and ran continuously through October 24.

Non-Indian reef net fisheries targeting adipose-marked Coho salmon were conducted from the end of Fraser Panel control in Area 7 (September 21) until September 30, with Chum salmon retention prohibited. From October 1 through October 29, reef nets were open daily with Chum salmon retention allowed. Chum salmon catch in this fishery, between October 1 and October 29, was 284 fish. Effort was low and there was no reef net fishing effort after early October.

The total 2014 Chum salmon catch by all gears in Areas 6, 7, and 7A, reported through October 29, was 147,719. Catch distribution, between Areas 7 and 7A, was 73% and 27% respectively. However, it should be noted that these catch reports may be incomplete as of the date of this report (Table 20). There were 1,067 Chum salmon reported as incidental catch in Areas 7 and 7A during Fraser Panel approved Sockeye salmon directed fisheries during August and September. During the fall Chum salmon-directed fisheries in Areas 6, 7 and 7A, there was a reported by catch of 17,525 Coho, two Chinook, and zero Steelhead.

2014 is the first year since this annex has been in place (2009) that the U.S. caught, and exceeded, it's full share of Chum (130,000) (Table 19). Chapter 6.10 (h) provides guidance for overage calculations, "Catches in excess of 135,000 Chum shall result in an overage being calculated by subtracting 130,000 from the total Chum catch. Overages will be accounted for by reducing the U.S. annual catch ceilings in up to two subsequent non-critical Inside Southern Chum salmon years;"

Table 19. U.S. 7/7A Chum catches, 2009-2014

Year	Total U.S. Catch	Total U.S. share	Remaining Share	Overage
2009	24,073	130,000	105,927	0
2010	23,404	130,000	106,596	0
2011	60,485	130,000	69,515	0
2012	72,866	130,000	57,134	0
2013	79,650	130,000	50,350	0
2014	143,191	130,000		13,191

Puget Sound Terminal Area Fisheries and Run Strength

Preseason forecasts for Chum salmon returns to Puget Sound predicted a fall Chum run size totaling approximately 1,077,000 fish. As of the date of this report inseason estimates indicate that Chum returns to Puget Sound are generally at or above forecast with some exceptions. In-season run size updates from the 2014 fall chum fisheries in Hood Canal and South Puget Sound indicate those runs are above forecast at 586,000 and 500,000 respectively. Some Puget Sound Chum fisheries are still underway and additional in-season estimates of abundance may occur. As of the date of this report, spawning escapement surveys are in progress for most Puget Sound stocks and therefore escapement estimates are not yet available. Early indications from these surveys do however suggest that some central Puget Sound fall Chum stocks appear to be below forecast again this year.

Table 20. Preliminary 2014 chum salmon harvest report for Washington salmon catch reporting areas 6, 7, 7A

	Area 6	Area 7				Area 7A			Areas 6,7,7A
Time Periods	**GN**	**PS**	**GN**	**RN**	**Area Total**	**PS**	**GN**	**Area Total**	**Total**
through 9/27	0	12	1	0	13	945	109	1,054	1,067
9/28-10/4	0	0	0	92	92	0	0	0	92
10/5-10/11	0	3,896	0	192	4,088	2,451	2,176	4,627	8,715
10/12-10/18	1,235	61,129	856	0	61,985	7,255	9,863	17,118	80,338
10/19-10/25	299	36,262	728	0	36,990	3,453	12,470	15,923	53,212
10/26-11/1	0	3,873	281	0	4,154	0	141	141	4,295
11/2-11/8	0	0	0	0	0	0	0	0	0
Total	1,534	105,172	1,866	284	107,322	14,104	24,759	38,863	147,719

Gear Type Abbreviations: GN = Gillnet, PS = Purse Seine, RN = Reef Net

Bycatch	Coho	Chinook	Steelhead
10/10-11/8	17,525	2	0

References:

Pacific Salmon Treaty (PST) Act of 1985. 2008 Agreement. U.S.-Canada. Public Law 99-5, 16 U.S.C. 3631.

Introduction

The 2014 Fraser River Panel fishing season was implemented under Annex IV of the Pacific Salmon Treaty (PST), and guidelines provided by the Pacific Salmon Commission to the Fraser River Panel. The treaty establishes a bilateral (U.S. and Canada) Fraser River Panel (Panel) that develops a pre-season management plan and approves in-season fisheries within Panel Area waters directed at Sockeye (Oncorhynchus nerka) and Pink (Oncorhynchus gorbuscha) salmon bound for the Fraser River (Figure 40). In partial fulfillment of Article IV, paragraph 1 of the PST, this document provides a season review of the 2014 U.S. Fraser River salmon fisheries as authorized by the Panel. Catch and abundance information presented is considered preliminary.

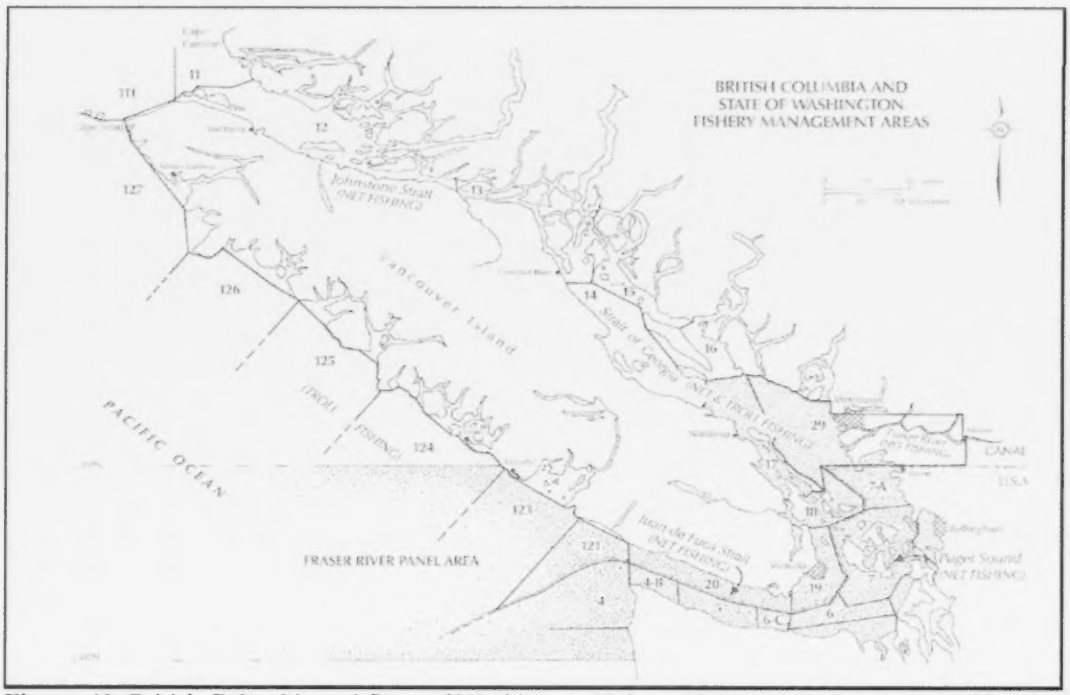


Figure 40. British Columbia and State of Washington Fishery Management Areas, 2014. The shaded area in the figure represents the marine waters managed by the Fraser River Panel.

Preseason Expectations and Plans

Forecasts and Escapement Goals

Pre-season run size forecasts and escapement goals by stock group (run) at various probability levels were provided to the Panel by the Department of Fisheries and Oceans, Canada (DFO). Table 21 shows the 2014 agreed pre-season Sockeye forecasts based on the 50 percent probability level forecasts, which represent the mid-point of the range of possible run sizes for all the stock management groups. Table 21 also provides the escapement goals for the Sockeye management groups based on the pre-season forecasted abundance. The escapement goals for all timing groups can change in-season as the run size estimates are updated.

Table 21. 2014 pre-season Fraser River Sockeye forecasts and escapement goals by run group. (Escapement Option 2)

	Early Stuart	Early Summer	Summer	Lates	Total
Forecast of Abundance	299,000	4,126,000	5,699,000	12,730,000	22,854,000
Escapement Goal	119,600	1,444,100	1,994,800	4,455,500	8,014,000

Diversion

Diversion is defined as the percentage of Fraser Sockeye migrating through Johnstone Strait (rather than the Strait of Juan de Fuca) in their approach to the Fraser River. Diversion through Johnstone Strait was forecasted pre-season to be 66% for Sockeye due to higher than average May sea surface temperatures (SST). Updated forecasts in July using both May and June SST predicted diversion rates of 50% and 34%.

Management Adjustments (MA) and Environmental Conditions

Management Adjustments (MA) for Sockeye salmon reflects the expected difference between escapement estimates at Mission (minus catch above Mission) and actual spawning escapements. If the adjustments are adopted by the Panel, they are added to the gross escapement goal, effectively increasing the goal for an impacted run. For 2014, MA's were modeled using forecasts of environmental conditions and return timing or median historical differences between estimates. Table 22 provides the pre-season projected MA's that were used for planning fisheries. In-season management adjustments use MA models that are based on both measured and forecasted temperatures and discharges or, for Late-run Sockeye, upstream migration timing

Table 22. 2014 pre-season proportional management adjustment (pMA) and corresponding management adjustments (MA) for each run group.

Early Stuart		Early Summer		Summer		Lates	
pMA	MA	pMA	MA	pMA	MA	pMA	MA
0.66	78,900	0.42	606,600	0.11	210,900	0.28	1,243,700

Run Timing

Run timing is temporal information about the presence of a salmon stock in a specific time and area. Run timing is an important variable when planning fisheries and predicting run size in-season. The following Area 20 50% dates (the dates when 50% of the stock or run group is forecasted to have passed through Area 20) were predicted pre-season for the major Fraser Sockeye run groups. Preseason timing forecasts for Early Stuart and Late-run Sockeye were calculated as weighted averages of 2014 cycle year medians, while Early summer and Summer-run Sockeye were estimated using a combination of 2014 cycle and all years' median run timings.

Table 23. 2014 Area 20 pre-season 50% run timing dates with updated 'preseason' timings revised on July 10. For this report the original preseason values are used for pre/post season comparison purposes.

Run Group	Area 20 50% Run Timing Date	Area 20 50% Run Timing (July 10)
Early Stuart	July 4	July 7
Early Summers	August 4	August 7
Summers	August 10	August 15
Lates	August 18	August 22

U.S. Total Allowable Catch (TAC)

Pre-season, the U.S. TAC was established at 1,991,200 Sockeye salmon across all stock groups. The TAC available by run group is below in Table 24.

Table 24. 2014 total US total allowable catch (TAC) by run group.

Run Group	Preseason US TAC
Early Stuart	137
Early Summers	322,600
Summers	542,900
Lates	1,125,700
Total	1,991,200

Preseason Management Plans

During the preseason planning process, the Fraser Panel evaluates and adopts management approaches for Fraser Sockeye and Pink salmon that address conservation and harvest objectives for each major stock group. The Fraser River Panel develops fishing plans and in-season decision rules with the objective of meeting management goals. Managing Fraser River Sockeye and Pink salmon involves a trade-off between catching abundant stocks and meeting escapement objectives for less abundant stock groups.

In 2014, the large preseason forecast of ~23 million Sockeye resulted in available US TAC across all stock groups (Table 24), though TAC was very limited for Early Stuart at only 137 fish. Despite the availability of TAC in Early Summer-run Sockeye, the majority of TAC resided in Summer-run and Late-run Sockeye groups.

In 2013, Summer-run Sockeye experienced a small post-season difference between estimates (DBE) despite an in-season pMA of 2.73 caused by river temperatures which approached 21°C. Similarly, the Late-run Sockeye DBE was actually positive despite high river temperatures (preseason pMA 1.03). Panel concerns about performance of pMA models for Early Summer-run and Summer-run Sockeye based on environmental conditions, along with uncertainty in long-term environmental forecasts available preseason, led the panel to adopt pMA values based on medians of past values.

While planning preseason fishing schedules, the U.S. Section had abundant TAC across Early Summer-run, Summer-run, and Late-run stock groups. Due to the anticipated high abundances of Early Summer-run Sockeye, which often has only limited US TAC, preseason fishing schedules were developed to start fishing during the peak of the Early Summer-run migration. There was ample TAC in the later stock groups, so Treaty and All Citizens fisheries were scheduled to be open continuously through the end of August 30.

In-Season Management

In-season, the Pacific Salmon Commission staff analyzes a variety of information to produce best estimates of diversion, management adjustments, run-timing, abundance, and harvest by stock group. These estimates are created using stock ID information, test fishing data, counts of escapements past Mission, harvest data and environmental information.

Run Assessment

The final in-season abundance estimates for 2014 (Table 25) indicate that Sockeye returned at ~13% below the preseason forecast when summed across all stock groups. Individual stock group abundance varied considerably from 55% below forecast for Early Summer-run sockeye, to 43% above forecast for Summer-runs. Both Early Stuart and Late-run Sockeye returns performed similarly relative to preseason expectations, with respective returns of 22% and 25% below forecast.

The 2014 Fraser Sockeye return was later than preseason timing forecasts for all stock groups (Table 26). Run timing ranged from 3 days late for Early Summers (50% date July 7) to 9 days late for Summer-run Sockeye (50% date Aug. 19).

Table 25. Comparison of 2014 pre-season vs. in-season abundance estimates for Fraser River Sockeye salmon by stock group (run).

Stock Group	Pre-Season 50% Probability Forecast	In-Season Run Size Estimate	Comparison: In-Season vs. Pre-Season Forecast
Early Stuart	299,000	233,000	-22%
Early Summer	4,126,000	1,840,000	-55%
Summer	5,699,000	8,134,000	+43%
Lates	12,730,000	9,582,000	-25%
Total Sockeye	22,854,000	19,788,000	-13%

Table 26. 2014 preliminary 50% run timing dates in Area 20.

Run Group	Pre-season 50% Run Timing Date	In-season 50% Run Timing Date
Early Stuart	July 4	July 9
Early Summer	August 4	August 7
Summer	August 10	August 19
Lates	August 18	August 26

Season Description

Prior to July 25:

Run-size changes: Early Stuart Sockeye run size was downgraded to 240,000 and migration completed.
Timing: The Early Stuart Sockeye A20 50% migration timing was estimated to be July 9th, 5 days later compared to preseason forecast.
Diversion: The 5 day average Sockeye diversion rate was 38%.
Stock ID: Early Stuart migration in marine areas was nearing completion and Summer-run and Early Summer-run Sockeye were the dominant stock groups migrating through marine areas.

Environmental Conditions/MA: In-river temperatures decreased after a recent peak of 18.9◦C on July 17th, but were forecasted to rise over the next week. River discharge was near the historical average at ~4,900 m3s-1. The Early Stuart management adjustment was increased to 1.96 (0.66 preseason).
Fisheries: All Treaty Indian and All Citizens fisheries remain closed.

Week ending August 1:

Run-size changes: There were no changes to stock group run sizes this week.
Timing: There were no changes to A20 50% timing for any stock group this week.
Diversion: The diversion rate for Sockeye continued to increase and was estimated to be 72%.
Stock ID: Recent marine test catches were dominated by Summer-run Sockeye (66%), followed by Early Summer-run (21%), and Late-run Sockeye (13%).
Environmental Conditions/MA: In-river discharge was ~ 21% lower than the historical average for this date at 3,616 m3s-1, and in-river temperature increased to 18.4◦C. Temperatures were forecasted to continue to rise over the next week. No changes were made to the MA this week.
Fisheries: Treaty Indian fisheries were open in areas 4B/5/6C on July 31 – Aug. 2. All Citizens fishing remains closed.

Week ending August 8:

Run-size changes: It was still too early to update run sizes for Early Summer-run, Summer-run, and Late-run Sockeye. However, the earlier timed Early Summer-run stocks appear to be similar to preseason forecast at this point.
Timing: There were no changes to A20 50% timing for any stock group this week.
Diversion: The diversion rate for Sockeye continued to rise with an average 5 day diversion rate of 83% (average of purse seine and gillnet test fisheries)
Stock ID: Stock ID proportions were very similar to the previous week with Summer-run Sockeye making up the largest proportion (68%) followed by Early Summer-run (16%), and Late-run Sockeye (16%).
Environmental Conditions/MA: In-river temperature increased to 20.0◦C (2.2◦C above average), and river discharge was ~17% below average for this date at 3,425 m3s-1. No changes were made to the MA this week.
Fisheries: Treaty Indian fisheries in areas 4B/5/6C remained open and on August 7 opened 6/7/7A until August 9. All Citizens fisheries have been closed thus far however gillnets and purse seines were scheduled to open on Aug. 9 and reefnets scheduled to open on August 10.

Week ending August 15:

Run-size changes: Both Early Stuart and Early Summer-run Sockeye were downgraded to 233,500 and 1,800,000 respectively.
Timing: Early Summer-run Sockeye run timing was updated to August 8th, 4 days later than preseason expectations.
Diversion: Fraser Sockeye diversion through Johnstone Strait increased to 98%.
Stock ID: Late-run Sockeye were beginning to build in test fisheries with 40% of test catches from Late-run stocks. Summer-run Sockeye made up the largest portion of Stock ID samples at 46%, followed by Early Summer-run at 14%.
Environmental Conditions/MA: In-river temperature was similar to the previous week at 19.7◦C (1.9◦C above average) but was forecasted to increase over the next week. Fraser River discharge continued to decline to 2,731 m3s-1, which is ~25% below the historical average. No changes were made to the MA this week.
Fisheries: Treaty Indian fisheries in areas 4B/5/6C were open daily this week, while areas 7/7A were open on August 7-9, 10-12, 13-14 and 15-16 (5:00AM-9AM). All Citizens gillnet and purse seine fisheries were open in areas 7/7A on August 9, 12, and 14. Reefnets were open August 10, 11, and 13.

Week ending August 22:

Run-size changes: Both Early Summer-run and Summer-run Sockeye run sizes were updated this week to 2,200,000 and 7,000,000 respectively.

Timing: Early Summer-run timing moved to August 10 (6 days later than preseason), while Summer-run Sockeye timing was updated to August 16 (6 days later than preseason).

Diversion: Sockeye diversion through Johnstone Strait remained high at 97%.

Stock ID: Early summer and Summer-run migration start- d to decline this week with recent test catches made up of 11% Early Summer-run, 39% Summer-run and 50% Late-run.

Environmental Conditions/MA: In-river temperatures remained high at 20.1◦C (2.8◦C above average), while river discharge was ~10% below average at 2,934 m3s-1. No changes were made to the MA this week.

Fisheries: Treaty Indian fisheries in areas 4B/5/6C were open daily and areas 6/7/7A were open August 16-18, 19-20, and 20-21. All Citizens fishing was open to gillnets and purse seines in areas 7/7A on August 18, 21, and 22 with reefnets open August 18 and 20-22.

Week ending August 29:

Run-size changes: Early Summer-run Sockeye were downgraded to 1,900,000 this week. Summer-run Sockeye were downgraded to 6.0 million fish on Aug. 26, but were upgraded back to 7.0 million on Aug. 29. No changes were made to Late-run run size.

Timing: Early Summer timing was moved up to August 8 (4 days later than preseason).

Diversion: Sockeye were migrating almost solely through Johnstone Strait this week with current Sockeye diversion at 99%.

Stock ID: Early Summer-run migration was largely complete, making up only 1% of stock ID proportions. Summer-run and Late-run migrations remain strong at 41% and 58% respective stock ID proportions.

Environmental Conditions/MA: In-river temperature declined slightly over the last week to 18.9◦C (2.1◦C above average). River discharge remained below average at 2,146 m3s-1 (24% below average). No changes were made to the MA this week.

Fisheries: Treaty Indian fisheries remained open daily in areas 4B/5/6C while treaty Indian fisheries in areas 6/7/7A were open August 23-25, and August 27-30. All Citizens gillnet and purse seine fisheries in areas 7/7A were open August 25 and 26 while reefnets were open daily.

Week ending September 5:

Run-size changes: Summer-run Sockeye run size was increased to 8,200,000. There was no update for Late-run Sockeye though estimates range from 3-5 million fish holding in Georgia strait.

Timing: Summer-run timing was moved back to August 18 which 8 days later than preseason forecast (previously adopted timing was Aug. 16).

Diversion: Diversion of Sockeye through Johnstone Strait is now ~100%.

Stock ID: Stock ID proportions were dominated by Late-run Sockeye at 78%, followed by 22% Summer-run Sockeye.

Environmental Conditions/MA: River discharge increased over the past week to 2,351 m3s-1; ~10% below average. River temperature dropped by 1.9◦C since last week, and was 17.0◦C this week (0.9◦C above average). No changes were made to the MA this week.

Fisheries: Treaty Indian fisheries remained open daily in areas 4B/5/6C while treaty Indian fisheries in areas 6/7/7A were open August 30-31, September 2-3 and 3-5. All Citizens gillnet and purse seine fisheries in areas 7/7A were open September while reefnets were open daily.

Week ending September 12:

Run-size changes: Both Summer-run and Late-run Sockeye run sizes were decreased to 7,800,000 and 10,800,000 respectively.

Timing: Timing of Late-run Sockeye was moved to August 26 (8 days later than preseason).

Diversion: Due to closure of the marine test fisheries, there were no more in-season updates to diversion rate.

Stock ID: Recent stock ID indicated Late-run Sockeye were 90-95% of the total migration with the remainder being Summer-run Sockeye.

Environmental Conditions/MA: In-river temperature declined to 15°C which is approximately equal to the historical average of 15.1°C. River discharge decreased to 1,961 m3s-1; ~23% below average. No changes were made to the MA this week.

Fisheries: Treaty Indian fisheries remained open daily in areas 4B/5/6C while treaty fisheries in areas 6/7/7A were open September 7-13. All Citizens gillnet and purse seine fisheries in areas 7/7A were open September 6, while reef nets were open daily.

After September 12:

Run-size changes: Summer-run Sockeye run size was increased to 7,900,000.

Timing: No further in-season changes were made to stock run timing.

Diversion: No further in-season changes were made to Sockeye diversion.

Stock ID: Stock ID samples from the remainder of the season were dominated by Late-run followed by Summer-run Sockeye.

Environmental Conditions/MA: Updated environmental conditions were not distributed after the Summer-run migration had dropped off because the MA's for remaining stock group, Late-run Sockeye are not updated by environmental conditions.

Fisheries: Treaty Indian fisheries remained open daily in areas 4B/5/6C through September 13 while treaty Indian fisheries in areas 6/7/7A were open September 13-20 and Area 7 only was open September 22-24, and 24-27. All Citizens gillnet and purse seine fisheries in areas 7/7A were open September 13 and 20 and Area 7 only was open on September 21 and 24. Reefnets were open daily through September 20.

Harvest

Between July 31 and Sept. 24 the United States caught a total of 693,024 Fraser River Sockeye in Panel area waters (Table 27). Throughout this period treaty Indian fisheries in Areas 4B/5/6C were open for a total of 44 days, and in Areas 6/7/7A for 40 days. The All Citizens fishery in Areas 7/7A was open for 36 days for reef nets and 15 days for gillnet and purse seine gears. The treaty Indian fishery caught 471,796 Sockeye and the All Citizens fishery landed 228,526. The primary reason US Treaty and All Citizens fleets did not attain their full share in 2014 was due to an unprecedented high diversion rate of 96%.

Table 27. Preliminary estimate of 2014 U.S. catches of Fraser River Sockeye salmon in Panel area waters.

	Treaty Indian	All Citizens
Ceremonial and Subsistence (all areas)	3,504	0
Commercial Catch in Areas 4B/5/6C	3,324	0
Commercial Catch in Areas 6/7/7A	464,968	228,526
Total Catch	471,796	228,526
% of U.S. Catch	67.4%	32.6%

C. 2014 POST-SEASON REPORT FOR CANADIAN TREATY LIMIT FISHERIES

Introduction

The chapters in Annex IV of the Pacific Salmon Treaty outline the joint conservation and harvest sharing arrangements between Canada and the United States of America (U.S.) for key stocks and fisheries subject to the Treaty. On December 23, 2008, Canada and the U.S. ratified new provisions for five chapters under Annex IV of the Pacific Salmon Treaty. These chapters came into effect on January 1, 2009. Chapter 4, which covers Fraser River sockeye and pink salmon, was revised in July 2014 and these revisions covered fisheries in 2014 through 2019. All management regimes under Annex IV continue to be implemented by Fisheries and Oceans Canada (DFO) for the 2014 season.

The catches reported below provide the best information available to December 1, 2014, and may change once all catch information for 2014 has been reviewed. The catches are based on in-season estimates (hailed statistics), on-grounds counts by DFO, and independent observers, logbooks, dockside tallies, landing slips (First Nation fisheries), fish slip data (commercial troll and net), creel surveys, logbooks and observers (sport and commercial).

Annex fisheries are reported in the order of the Chapters of Annex IV. Comments begin with expectations and management objectives, followed by catch results by species, and where available and appropriate, escapements. The expectations, management objectives, catches and escapements are only for those stocks and fisheries covered by the Pacific Salmon Treaty; domestic catch allocations have been excluded. Table 52 summarizes 1996-2014 catches in Canadian fisheries that have at some time been under limits imposed by the Pacific Salmon Treaty.

Annually, DFO releases a Salmon Outlook document which is referenced in various sections of this report; this document provides a preliminary indication of salmon production, and associated fishing opportunities by geographic area and species stock groups called an Outlook Unit.

Transboundary Rivers

Stikine River

Canada developed a fishing plan for Stikine River salmon fisheries based on the catch sharing and management arrangements outlined in Annex IV, Chapter 1, Paragraph 3 of the Pacific Salmon Treaty (PST), including the arrangements agreed to on January 17, 2008 for the 2009 to 2018 period. Accordingly, the 2014 management plan was designed to meet agreed escapement targets and the following harvest objectives: 1) to harvest 50% of the total allowable catch (TAC) of Stikine River sockeye salmon in existing fisheries; 2) to allow additional harvesting opportunities in terminal areas for enhanced sockeye that were surplus to spawning requirements; 3) to harvest up to 5,000 coho salmon in a directed coho fishery; and 4) to harvest approximately 1,400 large chinook salmon in a test fishery, conducted by the commercial fleet. As the preseason run size estimate of 26,100 large chinook was less than the PST preseason threshold run size of 28,100 large chinook, neither Canada nor the U.S. engaged in a directed net fishery. The allowable catch for the U.S. and Canada, therefore, was limited to its historical base level catches of 3,400 and 2,300 large chinook salmon, respectively. In addition, Canada was permitted to harvest 1,400 large chinook salmon for in-season and post-season run size assessments purposes.

In 2014 Canada was obligated under Annex IV, Chapter 1, Paragraph 4 of the PST to take corrective actions to bring future catches in alignment with Treaty provisions. This paragraph was triggered given that Canada exceeded its Treaty catch share of sockeye salmon on three occasions during the past five years. As such, Canada reduced its TAC of Tahltan Lake sockeye by 27 per cent, which mirrors the average TAC overage Canada harvested since 2009.

In May 2014 a rockslide occurred near the mouth of the Tahltan River. The slide deposited approximately 8,000 m^3 of debris into the river which effectively blocked access to Tahltan River chinook and sockeye spawning sites through until mid-July. Mid-July river flows assumed a moderate to low flow regime resulting in adequate fish passage. An estimated 70% (11,100) of the chinook and 9% (3,500) of the sockeye populations in the Tahltan River failed to reach their spawning grounds. (Note: the Tahltan River produces 53% and 45% of the total Stikine River chinook and sockeye populations, respectively.) A salvage operation conducted by Tahltan First Nations and DFO succeeded in capturing and air lifting 1,100 chinook and 3,700 sockeye above the rockslide during the month of July. Plans are currently being developed to improve fish passage at the rockslide in anticipation of the 2015 salmon return.

The 2014 commercial fishing season opened on May 5 (statistical week 19) and ended September 4 (statistical week 36). From statistical weeks 19 through to 24, the commercial fishing fleet engaged in weekly chinook salmon test fishery openings. In statistical week 25, a directed chinook salmon fishery was prosecuted as a result of the in-season chinook salmon run size estimate exceeding 24,500 fish (in-season threshold number used to trigger a directed chinook salmon fishery). From statistical week 26 through 34 a directed sockeye fishery was prosecuted followed by a directed coho fishery, which ended in statistical week 36.

Commercial gear consisted of one 135-metre (443 ft.) gill net per licence holder. The maximum mesh size allowed was 204 mm (8") through June 21, after which time the maximum mesh size was restricted to 140 mm (5.5"). The lower Stikine commercial fishing grounds covered the area from the international (U.S. / Canada) border upstream to near the confluence of the Porcupine and Stikine Rivers, and also included the lower 10 km (6 mi.) reach of the Iskut River.

In the upper Stikine commercial fishery, located upstream from the Chutine River, fishing periods generally mirrored those in the lower Stikine commercial fishery, but lagged by one week. Fishers were permitted one net. As in past years, the commercial fishing area was extended upstream to the mouth of the Tuya River. This action was taken in order to provide for a terminal fishing opportunity on Tuya River bound sockeye salmon, specifically at sites located upstream of the Tahltan River. For the seventh consecutive year, no commercial fishing activity occurred at this site. The Tuya run, which consists entirely of sockeye produced from the Canada-U.S. Stikine enhancement program, has no spawning escapement requirement since these fish are unable to return to Tuya Lake due to several velocity barriers located in the lower reach of the Tuya River. Tuya sockeye are released into Tuya Lake as young of the year juveniles.

The First Nation Food, Social, and Ceremonial (FSC) fishery located near the community of Telegraph Creek, British Columbia (B.C.) was active from late May to mid-August, with no time or gear restrictions imposed in 2014.

Most of the chinook salmon sport fishing effort in the Stikine River watershed typically occurs in the lower reach and at the mouth of the Tahltan River. Additional activity occurs less intensively in the Iskut River and other areas within the Stikine River drainage. Sport fishing activity commenced in late June; however, fishing effort and catch was relatively low, with the majority of the catch released to salmon salvage operations. Again in 2014, the Tahltan First Nation closed a popular camping site within the principal fishing grounds in order to reduce the harvest of Little Tahltan chinook salmon, which have experienced a persistent decline since 2007.

Chinook Salmon

The pre-season forecast of Stikine River chinook salmon, as developed by the Canada / U.S. Technical Committee for the Transboundary Rivers (TCTR), was for a below average terminal run size of 26,100 large chinook salmon (i.e. fish with a mid-eye to fork length of >660mm (~26") or a fork length of >735mm (~29")). For comparison, the previous 10-year (2004-2013) average terminal run size was approximately 39,000 large chinook salmon. A pre-season forecast run size of <28,100 precludes Canada or the U.S. from

scheduling a directed fishery, whereas an in-season run size of >24,500 large chinook is required to permit a targeted chinook fishery. To determine in-season run strength, Canada engaged in a test fishery relying on the commercial fleet.

The total combined gill net catch of chinook salmon in the First Nation and commercial fisheries included 1,916 large chinook salmon and 614 jacks compared to 2004-2013 averages of 7,047 large chinook salmon and 1,464 jacks, while the test fishery yielded a harvest of 1,342 large chinook and 145 jack chinook salmon. The 2014 sport fishery yielded a total catch of approximately 50 large chinook salmon.

In-season management was influenced significantly by run size projections derived from the Stikine Chinook Management Model (SCMM), a joint Canada-U.S. mark-recapture program, and other stock assessment tools (including the relationship between the commercial fishery catch per unit effort (CPUE) and run size from 2005-2013). In-season estimates based on the average of the mark-capture and model estimates were calculated post statistical week 23. In-season terminal run size projections ranged from 25,000 fish in statistical week 25 to 26,700 fish in statistical week 27. According to the in-season projections, the TAC for Canada in a directed chinook salmon fishery varied from 3,200 to 5,700 large chinook salmon. The TAC included the allowable catch based on current run size estimates and PST catch shares, the base level catch of 2,300 fish, plus 1,400 fish allocated under a test fishing regime.

A test fishery was required to determine weekly run sizes by both using test fish CPUE and the ratio of spaghetti tags recovered in the fishery (mark-recapture project). Canada endeavoured to partition the chinook test harvest guideline of 1,400 fish in accordance with average weekly run timing. Based on an in-season run size estimate that exceeded the trigger level of 24,500 large chinook salmon, a commercial fishery was initiated in statistical week 25. The following week the first targeted sockeye fishery commenced. To minimize incidental chinook catches a mesh size restriction of maximum 140 mm (~5.5") was implemented.

The final post-season estimate of the terminal run was 29,300 large chinook salmon, including an in river run size based on mark-recapture data of 27,700 large chinook salmon and a total U.S. catch estimate of 1,600 large chinook salmon. Accounting for the total Canadian catch of 3,400 large chinook salmon (includes commercial, First Nation, sport and test catches), the total system-wide spawning escapement was estimated at approximately 24,300 large chinook salmon. Adjusting for the estimated loss of 9,300 Tahltan River chinook salmon as a result of the 2014 rockslide, the total effective escapement was 15,000 large chinook. This escapement estimate was 14% below the target S_{MSY} escapement goal of 17,400 large chinook salmon, but within the escapement goal range of 14,000 to 28,000 large chinook salmon. The final post-season run size of 29,300 fish translated into an allowable Canadian harvest of 6,800 large chinook, while the U.S. was permitted to harvest of 3,900 large chinook in directed commercial fisheries.

The 2014 chinook salmon escapement enumerated at the Little Tahltan weir was 169 large chinook and 39 jack chinook salmon. It is estimated that 70% of the 2014 Little Tahltan River chinook salmon were unable to reach their spawning grounds as a result of the migration barrier created by the Little Tahltan River rockslide, and in this respect, the total inferred escapement to the Little Tahltan River (in the absence of the rockslide) was estimated at 560 large and 56 jack chinook salmon. The actual escapement of 169 large chinook salmon in the Little Tahltan River was well below the S_{MSY} estimate of 3,300 fish and failed to meet the lower end of the escapement goal range of 2,700-5,300 large chinook salmon. The proportion Little Tahltan escapement to the Stikine wide escapement was only 1%, while on average the contribution of this stock exceeds 14%. Despite providing an accounting for the effects of the rockslide, the inferred escapement of 560 chinook is anticipated to be well below the number required to maintain the health of this stock into the future. 2014 is the eighth consecutive year that the lower end of the escapement objective was not achieved for Little Tahltan chinook salmon.

In addition to the mark-recapture study, the Little Tahltan weir project and aerial surveys, genetic samples were collected on a weekly basis from chinook salmon caught in the U.S. District 108 fishery, and from weekly catches taken in the Canadian commercial fishery. These data were used to determine the total U.S. interception of Stikine River chinook; the in river genetics will be analyzed to assess stock specific run timing and run size.

Escapement counts in the Verrett River (a tributary of the Iskut River, located in the lower reach of the Stikine River) were deemed to be unreliable in 2014 due to poor viewing conditions as reported by the carcass pitch crew stationed at the creek from August 5-9; however, the crew characterized the run as below average. A relatively strong return of chinook salmon to Shakes Creek (near Telegraph Creek) was reported by residents living at the creek mouth.

Sockeye Salmon

The forecast for Stikine River sockeye salmon, as developed by TCTR, was for a terminal run size[1] of 152,400 fish including: 71,600 Tahltan Lake origin sockeye salmon (34,100 wild and 37,500 enhanced); 25,100 enhanced Tuya Lake sockeye; and 55,800 non-Tahltan wild sockeye salmon, which constituted a below average forecast. For comparison, the previous 10-year average (2004-2013) terminal run size was approximately 196,000 fish.

Preliminary combined catches from the Canadian commercial and First Nation gill net fisheries in the Stikine River totaled 41,000 sockeye in 2014; below the 2004-2013 average of 58,200 fish. The lower Stikine River commercial fishery harvested 30,500 sockeye, while the upper Stikine River commercial and First Nation fisheries harvested a total of 550 and 10,000 sockeye salmon, respectively. The preliminary estimate of the total contribution of sockeye salmon from the Canada/U.S. Stikine sockeye enhancement (i.e. the fry-planting program) to the combined Canadian First Nation and commercial catches was 18,500 fish (or 45% of the catch).

In addition to these catches, 1,800 sockeye salmon were taken in the stock assessment test fishery located near the U.S/ Canada border.

A total of 40,145 sockeye salmon was counted through the Tahltan Lake weir in 2014, 30% above the 2004-2013 average of 31,990 fish and well above the escapement goal range of 18,000 to 30,000 fish. An estimated 19,000 fish (48%) originated from the fry-planting program, which was above the 41% contribution observed in smolts leaving the lake in 2011, the principal smolt year contributing to the 2014 return. A total of 3,281 sockeye salmon was collected for broodstock (2,881) and stock identification purposes (400), resulting in a spawning escapement of 36,864 sockeye salmon in Tahltan Lake.

The Tahltan River rockslide is believed to have prevented approximately 9% of the total 2014 Tahltan Lake bound sockeye return. In the absence of the rockslide, the weir count would have likely achieved 44,500 sockeye.

The total estimated run size of 80,400 Tahltan Lake sockeye was approximately 13% above the pre-season expectation of 71,600 fish.

The spawning escapements for the non-Tahltan and the Tuya stock groups are calculated using stock identification, test fishery and in-river commercial catch and effort data. The average of the test fishery and the commercial fishery catch-per-unit of effort (CPUE), which operated over the full duration of the run, were used as the principal tool in assessing the spawning ground escapements of non-Tahltan Lake and the Tuya sockeye stock groupings. Based on the run reconstructions generated from the test and commercial

[1] Terminal run excludes U.S. interceptions that occur outside Districts 108 and 106.

fishery CPUE, the preliminary escapement estimates for 2014 were 26,500 non-Tahltan and 21,400 Tuya sockeye salmon. The non-Tahltan spawning escapement estimate was within the escapement goal range of 20,000 to 40,000 and was 8% below the mid-point escapement goal of 30,000 sockeye salmon (close to the recent 10 year average of 26,800 fish). The estimated escapement of 21,400 Tuya Lake sockeye salmon was well above the recent 10 year average of 11,300 fish. These fish do not contribute to the natural production of Stikine River sockeye salmon due to migration barriers that obstruct entry to their nursery lake and potential spawning areas.

Based on the in-river run reconstruction of the Tahltan Lake run expanded by run timing and stock identification data in the lower river and estimated harvests of Stikine River sockeye salmon in U.S. terminal gill net fisheries, the preliminary post-season estimate of the terminal sockeye run size is approximately 159,400 fish. This estimate includes 80,400 Tahltan Lake origin fish, 36,400 Tuya Lake origin fish, and 42,500 sockeye of the non-Tahltan stock aggregate. A Stikine River run size of this magnitude is below the 2004-2013 average terminal run size of 195,100 sockeye salmon and is approximately 5% above the preseason forecast of 152,400 fish.

Similar to 2008-2013, Canada relied on other in-season abundance estimates than those derived from the Stikine sockeye management model (SMM). As a result, most of the in-season run projections used in management of the Canadian fisheries were based on the average of the SMM model and an in-river regression model. The run size projections ranged from 198,800 fish in statistical week 27 to 269,100 fish in statistical week 28. The final in-season run size estimate was 234,500 fish, based on the average of the two approaches, while the final estimate based solely on the SMM was 234,300 fish. The preliminary post-season estimate was 159,400 sockeye salmon with a Canadian allowable harvest of 46,400 fish. The actual harvest was 41,000 fish, slightly below the allowable catch.

Coho Salmon

For the sixth consecutive year, most of the commercial fishing fleet remained in the fishery to harvest coho salmon resulting in a total catch of 5,400 coho salmon. A total catch of 4,992 coho salmon was taken during the targeted coho fishery in statistical weeks 35-36. The total catch was above the recent 10 year average of 3,300 fish.

A coho salmon test fishery was not conducted in 2014. Incidental catches and CPUE taken in the sockeye salmon test and commercial fisheries were well above average. The CPUE observed in the targeted coho salmon fishery was also above average. Aerial surveys of six index spawning sites, however, yielded below average counts taken under good viewing conditions. The reasons for the discrepancy between aerial surveys and the high coho salmon CPUE could not be fully explained.

Joint Sockeye Salmon Enhancement

Joint Canada/U.S. enhancement activities continued from 2013 through 2014 with the collection of sockeye salmon eggs from Tahltan Lake in British Columbia, transportation of eggs to the Snettisham Hatchery in Alaska where they were raised to fry, and subsequent transportation and release at out-plant sites in British Columbia.

Through late May and early June 2014 approximately 2.1 million fry were out-planted into Tahltan Lake and 462,000 into Tuya Lake. The fry originated from the 2013 egg-take and were mass-marked at the Snettisham hatchery with thermally induced otolith marks. Green egg to released fry survival was approximately 66% for the eggs designated for Tuya Lake and approximately 59% for those designated for Tahltan Lake. A total of 370,000 fry held at the Snettisham hatchery were destroyed due to Infectious Hematopoietic Necrosis virus (IHNv). Sockeye salmon enhancement programs have been subject to IHNv outbreaks before and while unfortunate the losses are within normal occurrence levels.

In the fall of 2014, approximately 3.9 million sockeye salmon eggs of a targeted 5.0 million were collected at Tahltan Lake and transported to Snettisham Hatchery in Alaska. As in previous years additional efforts beyond beach seining were employed to acquire brood stock including angling and temporarily holding female brood stock to mature in floating net pens in the lake. Some challenges were faced this year including later arrival of sockeye due to a rock slide barrier on the Tahltan River, a grizzly bear swimming out and releasing male brood stock after the last fishing day and bad weather delaying air transport of eggs to Snettisham Hatchery. Based on initial hatchery survival rates and historical egg to survival rates an estimated 2.5 million sockeye salmon fry will be available in 2015 for release.

Taku River

As with the Stikine River, the fishing plan developed by Canada for the Taku River was based on the arrangements in Annex IV, Chapter 1, Paragraph 3 of the PST in effect for 2009 through 2018. Accordingly, the plan addressed conservation requirements and contained the following harvest objectives: 1) harvest 20% of the TAC of Taku River sockeye salmon (adjusted as necessary according to projections of the number of enhanced sockeye), plus the projected wild sockeye in-river escapement in excess of 1.6 times the spawning escapement goal; 2) to harvest enhanced Taku River sockeye salmon incidentally to wild sockeye salmon; 3) to harvest 3,000, plus any excess over the escapement target of 70,000 coho salmon in a directed coho salmon fishery, dependent on in-river run size projections; and 4) to consider a directed chinook salmon fishery once two consecutive weekly in-season estimates suggested an allowable catch, weekly harvest guidelines were to be adjusted down by 30% to account for forecast error.

The 2014 commercial fishing season on the Taku River opened on May 25 (statistical week 22), closed for a period, re-opened on June 15 (statistical week 25) and closed on October 11 (statistical week 41) for the season. However, all commercial fishing activity effectively ceased by mid-September (statistical week 38) due to marketing challenges and water conditions experienced on the Taku River at this time of year. Fishing area and gear restrictions were as per recent years, and incorporated the maximum gill net length of 36.6 metres, established in 2008 for drift gill nets and in 2009 for set gill nets.

The Taku River commercial fishing grounds in Canada consist of the mainstem of the river from the international border upstream approximately 18 km (11 miles), to a geological feature known locally as Yellow Bluff. Almost all fishing activity takes place in the lower half of this area, downstream of the Tulsequah River.

The First Nation FSC fishery is primarily located in the lower Taku River in the same area as the commercial fishery described above. However, small numbers of fish are also harvested on the lower Nakina River and at the outlet of Kuthai Lake. There were no time or gear restrictions imposed on the First Nation fishery in 2014.

Most of the chinook salmon sport fishing effort in the Taku watershed typically occurs on the lower Nakina River. Less intensively-used sport fishing sites exist on the Tatsatua River, the Sheslay River and other areas within the Taku River drainage. Effort and catches are poorly documented but are believed to be negligible for all species except chinook salmon and steelhead (due to the remote nature of the watershed and difficult access).

Chinook Salmon

The bilateral pre-season forecast was for a terminal run of 26,800 large chinook salmon, approximately 35% below the previous 10-year average of 41,500 fish. The forecast generated by the Taku River chinook salmon model was 37,900 fish. However, due to persistent overestimation in recent years coupled with a pattern of decline in chinook salmon stocks in the North Pacific, the forecast was reduced by 29%. A run size of 26,800 fish was slightly above the S_{MSY} escapement goal of 25,500 fish, and as a result, there was no allowable catch (AC) for either the U.S. or Canada, and a minor adjustment to the base level catches (BLCs) of 1,500 fish for Canada and 3,500 fish for the U.S. was required. To respect the poor forecast performance and below average run outlook, the test/assessment fishery was reduced to 1,200 from 1,400 as per the recommendation from the Transboundary Rivers panel.

The catches of large chinook salmon in the Canadian fisheries were: 1,230 in the test/assessment fishery; 201 harvested in the directed commercial chinook fishery; 840 large chinook salmon captured incidentally in the directed commercial sockeye salmon fishery; 96 large chinook salmon in the First Nation FSC fishery; and an estimated 105 large chinook salmon in the sport fishery. The total base level and test fishery harvest of 2,472 large chinook salmon was within the allowance of 2,700 fish. In-season run projections identified a small AC for Canada sufficient enough to conduct a directed fishery, but post season estimates were below the necessary threshold for a directed fishery.

The bilaterally agreed Taku River large chinook spawning escapement estimate for 2014 was 23,532 fish which was below the S_{MSY} target of 25,500 but within the goal range of 19,000 to 36,000. The 2004-2013 average spawning escapement is 31,370 large chinook (which was associated with a higher target until 2009). During aerial surveys of five index areas, a total of 2,297 large chinook salmon were observed; this was 47% below the 2004-2013 average.

The Canadian catch of large chinook was 70% below the 2004-2013 average of approximately 4,200 fish (excluding test/assessment fisheries). The 2014 harvest of small chinook was 657 fish (641 commercial and 16 First Nation FSC), 12% above the 2004-2013 average of 586 fish.

Sockeye Salmon

The Canadian pre-season run outlook for wild sockeye salmon was 190,000 fish, approximately 4% above the previous 10-year average total run size of 183,000 fish. In addition, approximately 3,100 adult sockeye salmon of Tatsamenie Lake origin were expected to return from fry out plants associated with the Canada/U.S. joint Taku sockeye salmon enhancement program. The forecasted return of enhanced Tatsamenie Lake origin sockeye salmon was 47% below the average return of 5,800 fish.

The Canadian sockeye salmon catch was 17,872 fish, of which 17,645 were taken in the commercial fishery, 219 in the First Nation FSC fishery, and 8 in assessment/test fisheries. This harvest was 19% below the 2004-2013 average total of 22,070 fish, with the contribution of sockeye salmon from the bilateral enhancement program estimated at 544 fish (3% of the total Canadian catch).

To reduce by-catch of chinook salmon, the maximum permissible mesh size in the directed sockeye salmon fishery which commenced in mid-June was 140 mm (5.5").
Projections of the total wild sockeye salmon run size, TAC, and total escapement were made frequently throughout the fishing season. As in past years, projections were based on the joint mark-recapture program, the estimated catch of Taku River sockeye in U.S. fisheries, the catch in the Canadian fishery, and historical run timing information. Projections in 2014 ranged from 137,000 in statistical week 33 (August 10-16) to 197,000 in statistical week 28 (July 6-12). The preliminary post-season estimate of run size is 146,152 fish (comprising 143,538 wild sockeye and 2,614 enhanced sockeye with a "wild" component 24% below the pre-season forecast, and an enhanced component 16% below the forecast). Subtracting the escapement target of 75,000 from the run of 143,538 fish, resulted in a TAC of 68,538 wild fish. The Canadian allowable catch, based on a 20% harvest share (which in turn is associated with an enhanced return of 1 to 5,000 fish), was 13,708 fish; the actual catch was 17,320 wild fish, representing 25% of the TAC of wild fish. Likewise, the U.S. allowable catch of wild fish, based on an 80% harvest share, was 54,831 fish; the actual catch was 34,755 fish, representing 51% of the TAC of wild fish.

The estimated spawning escapement of wild sockeye salmon in the Canadian section of the Taku River was 91,455 fish which was above the target range of 71,000 to 80,000 fish. The escapement is 8% below the 2004-2013 average of 99,182 fish. Based on weir counts, escapements to the Kuthai, Little Trapper, Tatsamenie and King Salmon lakes were 208, 6,607, 2,106, and 1,061 sockeye salmon, respectively. The Kuthai Lake escapement was 86% below the primary brood year count, and 93% below the 2004-2013 average. The Little Trapper escapement was 19% above the primary brood year count but 43% below average. The Tatsamenie

count was 4% above the primary brood year count and 74% below average while the escapement to King Salmon Lake was 33% below average.

Coho Salmon

The catch of 14,568 coho salmon (14,464 commercial and 104 First Nation FSC) was 86% above the 2004-2013 average of 7,822 fish. The catch during the directed commercial coho salmon fishery, i.e. after statistical week 33, was 11,768 fish. An assessment fishery was implemented in 2014, catching a total of 2,000 coho. Based on mark-recapture data, the preliminary bilateral estimate of the run into the Canadian section of the drainage is 135,080 fish. In accordance with PST harvest arrangements for the 2014 Taku River coho salmon season, at a run size of this magnitude, Canadian harvesters were entitled to harvest any surplus over the 2014 escapement target of 70,000 coho salmon in a directed fishery starting in statistical week 34. The preliminary post-season spawning escapement estimate is 118,512 fish, 2% below the previous 10-year average of 120,830 fish. The 2014 return was well above the top end of the historical escapement goal range of 27,500 to 35,000 fish; however, this escapement goal is under review and is likely to increase pending conclusion of technical and scientific review.

Joint Sockeye Enhancement

Joint Canada/U.S. enhancement activities continued from 2013 through 2014 with sockeye salmon fry hatched at Snettisham Hatchery in Alaska transported back to Tatsamenie Lake, British Columbia (where these fish were collected as eggs in 2013).

Approximately 75% of the 1.8 million sockeye salmon eggs collected in 2013 from Tatsamenie Lake survived to the fry stage at the Snettisham Hatchery in Alaska. Approximately 184,000 pre-emergent fry from one incubator were destroyed due to Infectious Hematopoietic Necrosis virus (IHNv). Sockeye salmon enhancement programs have been subject to IHNv outbreaks before and while unfortunate the losses are within normal occurrence levels.

Between May 29, 2014 and June 11, 2014 approximately 1.1 million emergent sockeye salmon fry were out-planted into Tatsamenie Lake. In addition, as part of an onshore extended rearing project, approximately 188,000 fed fry were released into onshore rearing tanks. These fish were released later into floating net pens in Tatsamenie Lake for additional rearing. As was observed in 2013, almost all of the extended reared smolts appeared to out-migrate almost immediately, rather than remaining in the lake to rear over the winter. 2014 saw the largest smolt outmigration since 1998 with a preliminary estimate of 1.3 million smolts leaving the lake through spring and summer.

Sockeye eggs were not collected from King Salmon Lake in 2013 due to low adult return numbers; as such, no fry were released into King Salmon Lake in 2014.

For 2014, the agreed bilateral Taku River enhancement production plan (TEPP) identified collection of up to 2.0 million sockeye salmon eggs from Tatsamenie Lake and up to 250,000 eggs from King Salmon Lake for transport to Snettisham Hatchery in Alaska for incubation and thermal marking. Approximately 1.5 million sockeye salmon eggs were collected from Tatsamenie Lake and a total of 203,000 sockeye salmon eggs were collected from King Salmon Lake.

At Trapper Lake water temperatures were recorded over the winter at a groundwater fed stream and a groundwater influenced shoreline location to provide additional information on possible spawning locations in support of a potential sockeye enhancement program for Trapper Lake.

Alsek River

Although catch sharing provisions for Alsek River salmon stocks between Canada and the U.S. have not yet been specified, Annex IV of the Pacific Salmon Treaty calls for the development and implementation of cooperative abundance-based management plans and programs for Alsek River chinook and sockeye salmon. In 2013, escapement goal ranges for Alsek River chinook and sockeye salmon were accepted by the Transboundary Rivers Panel, these are: 3,500 to 5,300 chinook and 24,000 to 33,500 sockeye salmon. The principal escapement-monitoring tool for chinook, sockeye, and coho salmon stocks on the Alsek River is the Klukshu weir, in operation since 1976 by DFO in cooperation with the Champagne-Aishihik First Nation (CAFN).

Previously, a joint escapement goal for Klukshu chinook salmon was developed by both DFO and Alaska Department of Fish and Game, which recommended an escapement goal range of 1,100 to 2,300 chinook spawners in the Klukshu drainage (McPherson, Etherton and Clark 1998). A review of the recent escapement goal analysis completed by Bernard and Jones in 2010 was conducted by the Canadian Science Advisory Pacific (CSAP). The 2010 analysis suggested a revised escapement goal of 800-1,200 fish. The revised goal was adopted by the TCTR early in 2013.

Prior to 2013, the biologically-based escapement goal for Klukshu sockeye salmon was 7,500 to 15,000 fish (Clark and Etherton 2000). Similar to the chinook salmon escapement goal review, an updated escapement goal analysis for sockeye salmon was completed in 2010 by Eggers and Bernard, and was reviewed by CSAP. The 2010 analysis suggested a revised escapement goal of 7,500-11,000 which was adopted by the Transboundary Technical Committee early in 2013.

Total drainage abundance programs are being investigated as part of the development of abundance-based management regimes and to accurately assess whether the escapement goals for Alsek River chinook and sockeye salmon stocks are appropriate and achievable. At this time, there are no programs in place to estimate the drainage-wide coho salmon escapement. A large and variable proportion of the escapement of each species is enumerated at the weir on the Klukshu River. Current escapement monitoring programs include the Klukshu River weir, Village Creek counter, post-season run reconstructions using genetic stock identification analyses and aerial surveys, which allow for annual comparisons of escapement indices. The most reliable long-term comparative escapement index for Alsek River drainage salmon stocks is the Klukshu River weir count.

The harvest estimate for the 2014 First Nation FSC fishery comprised of the fish taken from the Klukshu River weir (elders only) and an estimate of catches above/below the weir (based on the past relationship with the weir count and harvest). An estimated 17 chinook, 1,140 sockeye and zero coho salmon were harvested in the FSC fishery. The recent average catches are 71 chinook, 1,405 sockeye, and 6 coho salmon. Preliminary catch estimates for the Tatshenshini sport fishery were an estimated 22 chinook salmon retained (167 released), and zero sockeye salmon retained (18 released). There were only two released coho recorded, although this value is considered incomplete as some effort and harvest may have occurred after monitoring ceased. The catches were 37%, 0%, and 0% of average for chinook, sockeye and coho salmon, respectively. As the chinook salmon return to the Klukshu River was forecasted in-season to fall below the escapement objective, retention was no longer permitted beginning July 26 (for the Yukon portion of the Tatshenshini River). On September 6, retention of sockeye salmon was increased to 4 fish/day as escapement objectives had been met.

The preliminary weir count and escapement estimates of Klukshu River sockeye salmon in 2014 were 12,384 and 12,148 fish, respectively. The count of 2,732 early run fish (count through August 15) was above the average of 2,571 as was the count of 9,652 late run fish, with an average of 8,679. The total escapement of 12,148 fish was above the upper end of the escapement goal range of 7,500 to 11,000 fish. The 2014 sockeye salmon count at Village Creek was 189 which represented approximately 20% of the return using historical run timing (counter not installed until late in the season); average is 2,400 fish.

The most reliable comparative chinook salmon escapement index for the Alsek River drainage is considered to be the Klukshu River weir count. The preliminary chinook salmon weir and escapement estimate in 2014 was 841 and 832 fish, respectively. The 2014 escapement estimate was slightly above the lower end of the escapement goal range of 800 to 1,200 Klukshu chinook salmon.

The Klukshu River coho salmon weir count was 341. The 2014 count, as in past years, is not considered a complete indicator of run strength as the weir is removed prior to the end of the coho salmon run to the Klukshu River.

Northern British Columbia

Areas 3-1 to 3-4 Pink Net Catch

For 2014, Canada was to manage the Area 3-1 to 3-4 net fisheries to achieve an annual catch share of 2.49% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon. With a total return of approximately 50.79 million pinks, the Alaskan Districts 101, 102 and 103 AAH was 40.04 million pinks. The resulting Area 3-1 to 3-4 Canadian commercial net total allowable catch of this AAH was approximately 997,013 pinks of Alaskan Districts 101, 102 and 103 origin.

In the Canadian northern boundary area, pink salmon returns were anticipated to be average to below average for Area 3 and Area 4, based on brood year return strength. Actual returns to Area 3 were above average, while the Area 4 return was as anticipated. The 2014 preliminary Canadian pink salmon catch in Sub-areas 3-1 to 3-4 was 450, 671 and the Alaska stock component of this catch is estimated to be 347,109, or 0.87 % of the AAH, well below the annex agreement of 2.49%.

Area 1 Pink Troll Catch

For 2014, Canada was to manage the Area 1 troll fishery to achieve an annual catch share of 2.57% of the annual allowable harvest (AAH) of Alaskan Districts 101, 102 and 103 pink salmon. With a Total Return of 50.79 million pinks, the resulting Area 1 Canadian commercial troll total allowable catch of this AAH was approximately 1.03 million pinks of Alaskan Districts 101, 102 and 103 origin.

The Canadian commercial troll fishery targeting pink salmon was open in the northern portion of Area 1 (Dixon Entrance AB Line) from July 1 to September 30. Pink retention was also permitted during the chinook directed fishery in parts of Area 1 which opened from June 21 to August 4 and again from September 1 to 30. Area 1 pink salmon directed effort was very minimal and the fishery harvested a total of 31,775 pink salmon, with an estimated 26,798 being of Alaskan origin. This equates to 0.07% of the Alaskan District 101, 102 and 103 pink AAH, well below the annex agreement of 2.57%.

Chinook AABM Fisheries

The pre-season abundance index for North Coast B.C. troll and Haida Gwaii sport fisheries in 2014 was 1.99, which permitted a total allowable catch of 290,300 chinook salmon in these fisheries. Preliminary estimates indicate a total catch of 214,901 chinook salmon; 172,001 caught in commercial troll fisheries and 49,000 caught in sport fisheries.

The North Coast B.C. troll fishery was opened for chinook fishing from June 21 to August 4 and from September 1 to 30. The entire 2014 Northern B.C. troll fishery was conducted under a system of individual transferable quotas. The size limit was 67 cm and barbless hooks and revival boxes were mandatory. No troll test fisheries were conducted in the North Coast of B.C. in 2014.

Sport fishing was open with a daily limit of two chinook/day and a possession limit of four chinook. An estimated 49,000 chinook were caught in the Haida Gwaii (Queen Charlotte Islands) sport fishery. A minimum size limit of 45 cm was in effect and barbless hooks were mandatory in the sport fishery.

Chinook Individual Stock-Based Management (ISBM) Fisheries

Fisheries included in this category are commercial net fisheries throughout north and central B.C., marine sport fisheries along the mainland coast and freshwater sport, and First Nations FSC fisheries in both marine and freshwater areas. The PST obligations in these fisheries are for a general harvest rate reduction (estimated in aggregate across fisheries) for ocean mixed-stock fisheries and for stock-specific objectives (i.e., achieving the escapement goal) in terminal areas.

North Coast commercial gill net catches totalled 2,632 chinook from Areas 3 to 6 (from hailed catch data). Chinook catch in Areas 3 and 4 were 2,209 and 423 chinook, respectively. No chinook were reported caught in Area 5 or in Area 6. These preliminary estimates of gill net catches include chinook less than 5 pounds (graded as jacks and small red fleshed chinook) not normally included for PSC accounting. Small chinook typically make up less than 5% of commercial gill net catches. Hail catch data tend to underestimate catch reported in fish slips by 25 to 30%. In addition, a total of 482 large chinook and 122 jacks were caught in the Tyee Test fishery on the Skeena River.

Central Coast commercial gill net catches totalled 2,283 chinook with 2,278 from Area 8 and 5 from Area 7 (from hailed catch data).

Johnstone Strait commercial fisheries including Area B seine and Area D gill net was managed by South Coast and corresponding catches are reported in the South Coast section of this report.

Tidal sport catch from lodges operating in the Smiths Inlet, Rivers Inlet, Hakai Pass and Bella Bella areas were estimated using log books. Approximately 8,550 chinook were retained at lodges in these areas in 2014.

Preliminary estimates for tidal sport catches near the mainland coast of Northern B.C. were 12,127 from a creel survey conducted in Areas 3 and 4 in 2014. The 2014 catches in the mainland sport fishery in Areas 5 and 6 were unknown. The preliminary estimate from a freshwater creel survey conducted in the Skeena River below Terrace in 2014 was 2,302 large chinook and 1,563 jacks. It was unusual to see this many jacks in the recreational catch on the Skeena River; however, large catches of jacks were also recorded in 2013. Tidal and freshwater catches of chinook salmon improved in Northern B.C. in 2014.

Catches by First Nations in the North Coast exceeded 11,826 chinook in 2014. Nisga'a and Gitanyow catches from the Nass River were 5,966 chinook. Haida catches on Haida Gwaii were estimated at 2,300 chinook. Catches by First Nations fisheries in the Skeena River were estimated at 3,560 chinook.

Catches by First Nations in the tidal portion of the Central Coast were reported as 608 chinook. The non-tidal catches included 2,279 Atnarko River chinook (Area 8) and 22 chinook from Rivers Inlet (Area 9).

Overview of Northern B.C. Chinook Stock Status

Since assessments of the ISBM fisheries are relative to the escapements achieved in the chinook indicator stocks, a brief overview of the 2014 returns is provided. Northern B.C. terminal runs to the Nass and Skeena Rivers were slightly higher than the low returns observed in 2013. Preliminary estimates of Nass River escapements were 11,066. Skeena River chinook escapements were approximately 28,496. Atnarko River chinook escapements were estimated at 25,863, very near the large returns in 2013.

Fraser River Sockeye

Objectives and Overview

The 2014 Fraser sockeye forecast was highly uncertain with an 80% prediction interval of 7.24 to 72.01 million. From this distribution of run size forecasts, the Fraser River Panel (FRP) adopted the 50% (p50) probability level of forecast of 22.85 million Fraser sockeye for pre-season planning purposes. A majority of the total return (~56%) was expected to be Late run sockeye, followed by Summer run (~25%), Early Summer run (~18%) and Early Stuart (~1%) sockeye. Pre-season planning focused on opportunities for all fisheries including First Nations FSC, sport, and commercial fisheries, with constraints on harvest opportunities to minimize impacts on stocks or species of concern.

Pre-season planning incorporated provisions to meet escapement objectives and meet conservation objectives for stocks of concern, while considering international and domestic objectives. Significant effort was placed on developing a pre-season plan for anticipated fisheries. The pre-season plan included the following assumptions and guiding principles, in no particular order:

- The Fraser River Panel operated in accordance with the new Chapter (Chapter 4, Annex IV of the Pacific Salmon Treaty), which came into effect prior to the 2014 season;

- The U.S. share of the annual Fraser River sockeye salmon TAC, harvested in the waters of Washington State, was set at 16.5% of the aggregate. To the extent practicable, the Fraser River Panel shall manage the U.S. fishery to implement a fishing plan that concentrates harvest on the most abundant management group (or groups). It is understood that the U.S. harvest may exceed 16.5% of the TAC for one or more of the less abundant management groups, despite concentrating the harvest in this manner;

- For computing TAC by stock management groupings, the Aboriginal Fishery Exemption (AFE) of 400,000 Fraser River sockeye, shall be allocated to management groups as follows: The Early Stuart sockeye exemption shall be up to 20% of the Fraser River AFE, and the remaining balance of the latter exemption shall be based on the average proportional distribution of First Nations FSC catch for the most recent three cycles, and modified annually as required to address concerns for Fraser River sockeye stocks and other species, and as otherwise agreed by the Fraser River Panel;

- Although the capability to assess in-season run size and marine migration timing would be good for Late run sockeye, an in-season run size estimate for Cultus Lake sockeye would not be possible due to low abundance relative to co-migrating sockeye stocks. As a result, the Cultus exploitation rate is assumed to be the same as the exploitation rate from the similarly-timed Late run stocks (excluding Birkenhead type) caught seaward of the confluence of the Fraser and the Vedder rivers;

- The four stock aggregates identified under the Pacific Salmon Treaty Annex generally contain stocks with similar timing in the marine area. Recent trends in timing of some stocks, including Raft River and North Thompson (in the Early Summer run prior to 2012), and Harrison River (in the Late run prior to 2012) sockeye now differs substantially from the other stocks in their recent run timing groups. In 2014, DFO continued to manage these stocks as part of the Summer run aggregate to better align them with other stocks of similar run timing. Escapement plans, management adjustments and harvest rules have been adjusted to account for this change;

- Canada's escapement plan specified escapement requirements that varied with run size for each of the run timing aggregates;

- The Total Allowable Mortality (TAM) cap describes the upper range of the total mortality (including management adjustments and exploitation rate). For 2014, Early Stuart sockeye would be managed to a TAM cap of 60% and the Early Summer, Summer and Late run sockeye would be managed to a TAM cap of 65%;

- At low abundances, low abundance exploitation rates (LAERs) are implemented to protect 90% of the run timing aggregate (10% LAER), while allowing for fisheries on more abundant co-migrating run timing groups and/or species. The exception is the Late run aggregate where a 20% LAER has been implemented consistent with recent years' practice;

- If the Late run sockeye return results in an allowable exploitation rate that is larger than 20%, the Cultus exploitation rate will increase as long as the recovery objectives continue to be achieved;

- To protect a significant proportion (90%) of the Early Stuart sockeye return, a rolling three week window closure would be implemented for commercial, sport and First Nations FSC fisheries if in-season abundance and/or management adjustments indicate that there is no harvestable surplus identified. The rolling three week window closure would be based on the run timing of the Early Stuart sockeye migration through various fishery areas; and

- Conservation concerns for other sockeye stocks and species continued to impact the planning of sockeye fisheries in 2014. The stocks and species of concern in 2014 were: Early Stuart sockeye, Cultus Lake sockeye, Nimpkish River sockeye, Sakinaw Lake sockeye, Fraser Spring 4_2 chinook, Fraser Spring and Summer 5_2 chinook, and Interior Fraser River steelhead.

Pre-season Assessment

In addition to Canada's escapement plan, estimates of run size, diversion rate, run timing and assumptions about in-season environmental conditions are key inputs required to seed the pre-season Harvest Planning Model, prior to observing in-season information. The main objective of the model is to identify potential fishing opportunities while attempting to meet conservation, international and domestic harvest objectives.

The 2014 sockeye run size forecasts were particularly uncertain given the large brood year escapements observed for some stocks, mainly those from the Shuswap and Harrison Rivers. The 2014 sockeye run size forecasts were calculated using methods similar to 2012 and 2013, which assesses the performance of both long-term stock-recruit models by assuming average productivity, and non-parametric models based on recent recruit per spawner data over the entire time series via jack knife analysis. The final forecast model for each stock was selected based on its ability to predict the stock's true returns over the full stock-recruitment time series.

As outlined in the Pacific Salmon Treaty, the mid-point of the forecast provided by Canada was used for management purposes, until in-season updates of run size were available. For pre-season planning purposes, the FRP used the 50% probability level for all run timing groups and stocks. The 2014 50% probability forecasts for all four management aggregates were as follows: Early Stuart 299,000; Early Summer run 4,126,000; Summer run 5,699,000; and Late run 12,730,000, for a total of 22,854,000 Fraser sockeye. The total four year old proportion of the 2014 forecast (~95% of the total combined three, four, and five year old forecast at the 50% probability level) is above average, given the strong contribution of the 2010 brood year escapements and strong return of stocks dominated by four year old sockeye.

Diversion Rate

The final pre-season forecast of the proportion of Fraser sockeye diverting through Johnstone Strait was 56%. The estimate is based on the relationship between the mean daily sea surface temperature measured

at the Kains Island (Quatsino) lighthouse in May and the estimated post-season northern diversion rate for 1977-2013.

For the purposes of pre-season planning, it is assumed that Northern Diversion increases over the course of the season. In addition, Early Stuart and Harrison sockeye are assumed to migrate predominately through the Juan de Fuca approach, regardless of migration timing.

Timing Forecasts

In previous years, the pre-season forecasts were based on the 50% marine arrival times to Area 20 for two sockeye salmon stocks (Early Stuart and Chilko River time series provided by the Pacific Salmon Commission) regressed against time series for five physical variables. Given the timings in 2010, the FRP made the decision to adopt estimates of timing based on weighted averages (by run size) of 2014 cycle year medians for Early Stuart and Late run sockeye, and a mix of 2014 cycle and all year' medians for Early Summer and Summer run sockeye. The following are the pre-season estimates of timing in Area 20 adopted by the FRP.

Table 28. Timing Estimates Used for Pre-Season Planning in Area 20

Stock	2014 Area 20 Timing
Early Stuart	July 4
Early Summers	August 4
Summer run	August 10
Late run	August 18

The following figure graphically illustrates the relative run size forecasts and run timing overlaps expected in 2014.

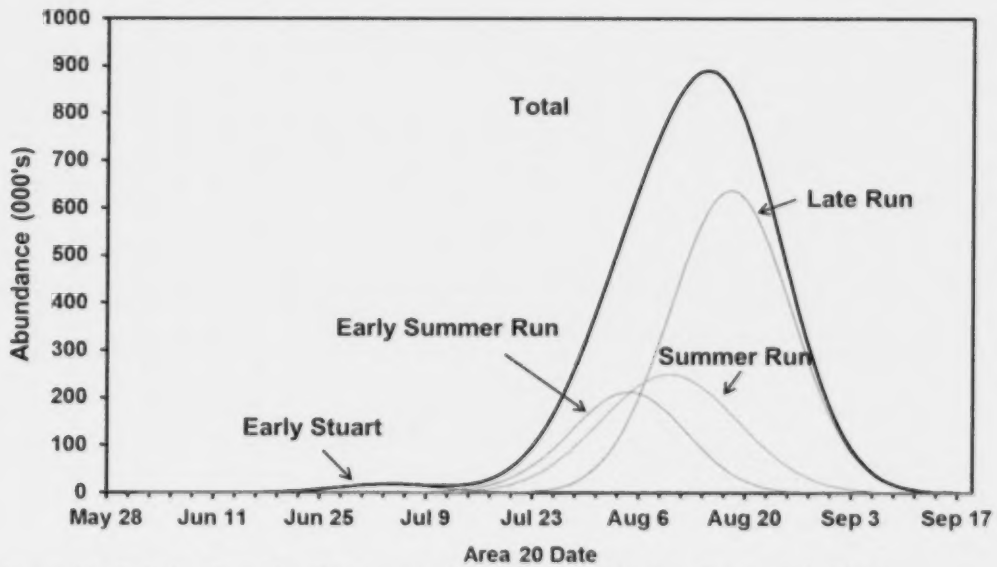


Figure 41. Relative Run Size Forecasts and Run Timing Overlaps Expected in 2014

Environmental Conditions and Management Adjustments

Management Adjustments (MA) reflect a quantity of fish that are added to the spawning escapement targets for the purpose of increasing the likelihood of achieving the spawning escapement targets. The general concept is that more fish are needed to pass Mission than needed for spawning ground escapement and the anticipated catch above Mission, to account for the historic discrepancy between the number of fish estimated at Mission in-season (minus the actual catch above Mission) and the number of fish counted on the spawning grounds. This discrepancy may be due to a number of factors, including but not limited to: critically high temperatures and/or discharge in the Fraser River; bias in estimates at Mission hydroacoustics and/or spawning ground escapement estimates; biased catch estimates; unreported catch; delayed mortality associated with escapes or releases from fishing gear; natural mortality; and/or predation. While all of these factors are included in the difference between estimates, generally the inputs used to estimate MAs are temperature and discharge rates in the Fraser River during the migration of Early Stuart, Early Summer and Summer run sockeye, and the 50% migration timing at Mission for Late run sockeye. In some cases a MA for an aggregate may include alternatives such as observed medians when the temperature and discharge models are thought not to apply for some stocks.

For the Early Stuart, Early Summer run and Summer run sockeye, MA estimates can be updated in-season, as river conditions, peak timing and run size information is acquired. In some years, Late run sockeye MA estimates can be updated in-season based on peak timing estimates. Management adjustments used in-season may also be informed by auxiliary information on the health of migrating sockeye.

In 2014, the pre-season Early Stuart sockeye proportional Management Adjustment (pMA) was estimated by the temperature and discharge model, given the forecast data provided by the Environmental Watch Program. The Early Summer run pMA was the historic median pMA (0.42) of the Early Summer run aggregate including Chilliwack and Pitt sockeye. The Summer run pMA was the historic median pMA of the Summer run aggregate excluding Harrison (0.08) weighted with the observed median for Harrison sockeye (0.39). The Late run pMA (0.28) was the mean of the 1998, 2002, and 2010 pMAs for Late run sockeye (excluding Birkenhead) weighted with the observed median for Birkenhead sockeye (0.26).

The pre-season MA was expressed as a percentage of the spawning escapement goal (pMA) and the number of sockeye this represents for 2014 p50 pre-season run sizes are outlined in the table below.

Table 29. MA Estimates used for Pre-Season Planning in 2014

	Pre-season Run Size	pMA	MA
Early Stuarts	299,000	0.86	102,900
Early Summers	4,126,000	0.42	606,600
Summers	5,699,000	0.11	210,900
Late run	12,730,000	0.28	1,243,700

2014 Escapement Plan

The Fraser River Sockeye Spawning Initiative is a multi-year collaborative planning process to develop a long-term escapement strategy. The annual escapement strategy seeks a balance between long-term objectives and short-term practical considerations, and combines technical analyses with qualitative judgment. A plan is developed every year and is vetted through consultative processes prior to the fishing season. The annual allowable exploitation rate for each run timing aggregate is adjusted based on run size and environmental conditions. The table below represents the pre-season escapement plan for 2014, as reflected in the final Salmon Integrated Fisheries Management Plan (IFMP). Note that the Management Adjustments in the Table below have been modified by the Panel subsequent to the release of the IFMP, based on adjustments to pre-season timing expectations.

Table 30. 2014 Fraser River Sockeye Escapement Plan – Pre-Season Run Estimates

Management Unit		Pre-season Forecast Return				
		p10	p25	p50	p75	p90
Early Stuart	forecast	132,000	189,000	299,000	476,000	709,000
	TAM Rule (%)	18%	43%	60%	60%	60%
	Escapement Target	108,000	108,000	119,600	190,400	283,600
	MA	71,300	71,300	78,900	125,700	187,200
	Esc. Target + MA	179,300	179,300	198,500	316,100	470,800
	LAER	10%	10%	10%	10%	10%
	ER at Return	0%	5%	34%	34%	34%
	Allowable ER	10%	10%	34%	34%	34%
	available harvest	13,200	18,900	100,500	159,900	238,200
	2014 Performance					
	Projected S (after MA)	72,000	102,000	120,000	190,000	284,000
	BY Spawners	60,300	60,300	60,300	60,300	60,300
	Proj. S as % BY S	119%	169%	199%	315%	471%
	cycle avg S	36,500	36,500	36,500	36,500	36,500
	Proj. S as % cycle S	197%	279%	329%	521%	778%

Management Unit		Pre-season Forecast Return				
		p10	p25	p50	p75	p90
Early Summer (w/o RNT)	*lower ref. pt. (w misc)*	251,000	245,000	239,000	223,000	218,000
	upper ref. pt. (w misc)	717,000	700,000	682,000	636,000	622,000
	forecast (incl. misc)	730,000	1,741,000	4,126,000	8,470,000	16,805,000
	TAM Rule (%)	65%	65%	65%	65%	65%
	Escapement Target	255,500	609,350	1,444,100	2,964,500	5,881,750
	MA	107,300	255,900	606,500	1,245,100	2,470,300
	Esc. Target + MA	362,800	865,250	2,050,600	4,209,600	8,352,050
	LAER	10%	10%	10%	10%	10%
	ER at Return	50%	50%	50%	50%	50%
	Allowable ER	50%	50%	50%	50%	50%
	available harvest	367,200	875,750	2,075,400	4,260,400	8,452,950
	2014 Performance					
	Projected S (after MA)	255,000	609,000	1,444,000	2,965,000	5,882,000
	BY Spawners	1,524,700	1,524,700	1,524,700	1,524,700	1,524,700
	Proj. S as % BY S	17%	40%	95%	194%	386%
	cycle avg S	291,400	291,400	291,400	291,400	291,400
	Proj. S as % cycle S	88%	209%	496%	1018%	2019%

(table continued on next page)

Management Unit		Pre-season Forecast Return				
		p10	p25	p50	p75	p90
Summer	*lower ref. pt. (w misc)*	1,119,000	1,119,000	**1,119,000**	1,119,000	1,119,000
(w. RNT & Har)	*upper ref. pt. (w misc)*	3,195,000	3,195,000	**3,195,000**	3,195,000	3,195,000
	forecast	2,127,000	3,393,000	**5,699,000**	10,116,000	17,781,000
	TAM Rule (%)	47%	65%	**65%**	65%	65%
	Escapement Target	1,119,000	1,187,550	**1,994,650**	3,540,600	6,223,350
	MA	89,500	95,000	**159,600**	283,200	497,900
	Esc. Target + MA	1,208,500	1,282,550	**2,154,250**	3,823,800	6,721,250
	LAER	10%	10%	**10%**	10%	10%
	ER at Return	43%	62%	**62%**	62%	62%
	Allowable ER	43%	62%	**62%**	62%	62%
	available harvest	918,500	2,110,450	**3,544,750**	6,292,200	11,059,750
	2014 Performance					
	Projected S (after MA)	1,119,000	1,188,000	**1,995,000**	3,541,000	6,223,000
	BY Spawners	3,757,100	3,757,100	3,757,100	3,757,100	3,757,100
	Proj. S as % BY S	30%	32%	**53%**	94%	166%
	cycle avg S	1,113,200	1,113,200	**1,113,200**	1,113,200	1,113,200
	Proj. S as % cycle S	101%	107%	**179%**	318%	559%

Management Unit		Pre-season Forecast Return				
		p10	p25	p50	p75	p90
Late	*lower ref. pt. (w misc)*	1,105,000	1,105,000	**1,105,000**	1,105,000	1,105,000
(w/o Har)	*upper ref. pt. (w misc)*	3,158,000	3,158,000	**3,158,000**	3,158,000	3,158,000
	forecast	4,248,000	7,465,000	**12,730,000**	22,059,000	36,719,000
	TAM Rule (%)	65%	65%	**65%**	65%	65%
	Escapement Target	1,486,800	2,612,750	**4,455,500**	7,720,650	12,851,650
	MA	572,400	1,005,900	**1,715,400**	2,972,500	4,947,900
	Esc. Target + MA	2,059,200	3,618,650	**6,170,900**	10,693,150	17,799,550
	LAER	20%	20%	**20%**	30%	30%
	ER at Return	52%	52%	**52%**	52%	52%
	Allowable ER	52%	52%	**52%**	52%	52%
	available harvest	2,188,800	3,846,350	**6,559,100**	11,365,850	18,919,450
	2014 Performance					
	Projected S (after MA)	1,487,000	2,613,000	**4,456,000**	7,721,000	12,852,000
	BY Spawners	7,788,900	7,788,900	7,788,900	7,788,900	7,788,900
	Proj. S as % BY S	19%	34%	**57%**	99%	165%
	cycle avg S	2,902,000	2,902,000	**2,902,000**	2,902,000	2,902,000
	Proj. S as % cycle S	51%	90%	**154%**	266%	443%
Available Harvest (TF, US, CDN)		3,487,700	6,851,450	**12,279,750**	22,078,350	38,670,350
Total projected spawners		2,933,000	4,512,000	**8,015,000**	14,417,000	25,241,000
total escapement goal		2,969,300	4,517,650	8,013,850	14,416,150	25,240,350

In-Season Assessment

In-season assessments in 2014 were challenging at times, due to the following:

- High diversion of sockeye through Johnstone Strait for the majority of the season;
- Test fishery catch per unit effort was higher in the marine area than the in-river test fisheries for much of the sockeye migration. This made it difficult to confirm appropriate expansion lines used to project sockeye returning past the Mission hydro-acoustic site;
- Predicted high Fraser River water temperatures that suggested increases to MA estimates, but observations of fish health and condition did not support the increases for some groups;
- The protracted return profile of the Summer run sockeye increased the uncertainty in the timing and abundance for this group;
- Although Summer run delay was suspected, it was difficult to determine in-season; and
- Catches in the Gulf troll test fishery appeared to underestimate the abundance of Late run sockeye delaying in the Strait of Georgia.

Migration and Timing

The final in-season Area 20 migration dates (peak) were later than the pre-season timings for all management groups (Table 31).

Table 31. Expected vs. Observed Timing by Stock Group

Stock	Area 20 Timing	
	Pre-season	**Final In-season**
Early Stuart	July 4	July 9
Early Summer	August 4	August 7
Summer run	August 10	August 19
Late run	August 18	August 26

Fraser River Environmental Conditions and Management Adjustment

The Fraser River discharge was average for the early portion of the Early Stuart migration and below average for the remainder of the season. Conversely, water temperatures were above average (at times high to extreme) for the entire sockeye migration. High water temperatures can cause serious adverse effects on migratory fish. The figures below illustrate the observed in-season Fraser River discharges at Hope and temperatures at Qualark Creek, as well as the corresponding estimated stock aggregate migration periods.

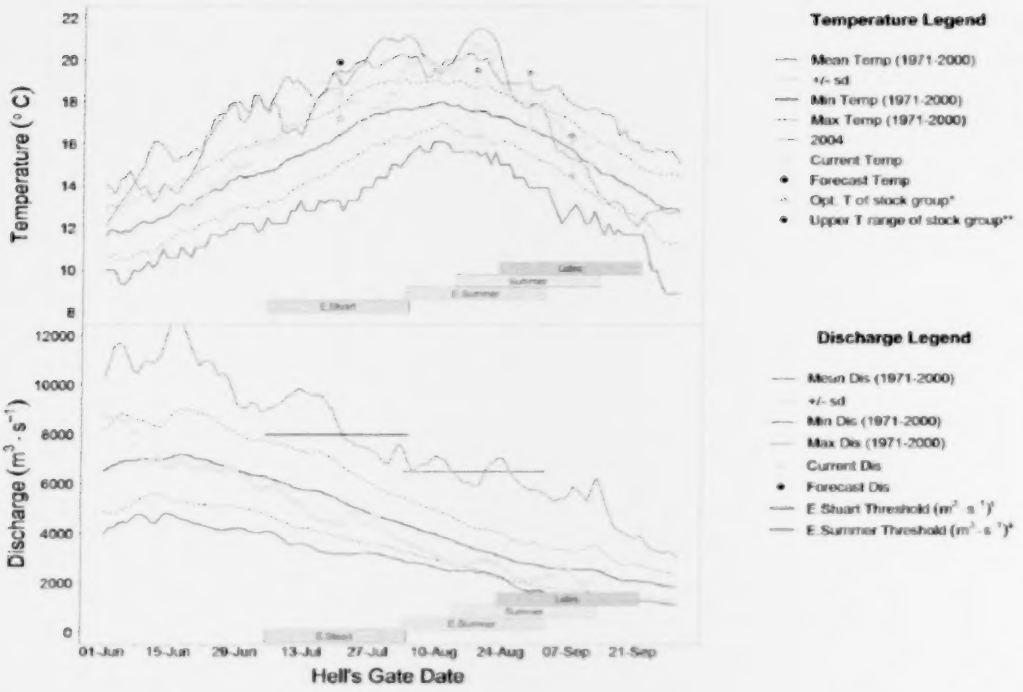


Figure 41. Fraser River Discharge at Hope and Temperature at Qualark Creek

Management Adjustment models can use environmental conditions and run timing as inputs. High temperatures were observed in July and August, and the MA models for Early Summer and Summer run sockeye suggested increases to the Management Adjustments. The MAs remained virtually unchanged from pre-season to final in-season for Early Summer and Summer run sockeye.

Table 32. Pre-season and In-season Management Adjustments

Stock	p50 Forecast	Pre-Season pMA	Pre-Season MA	Final In-season Run Size	Final In-Season pMA	Final In-Season MA[a]
Early Stuart	299,000	0.86	102,900	233,500	2.12	229,000
Early Summer	4,126,000	0.42	606,600	1,900,000	0.42	279,300
Summer	5,699,000	0.11	210,900	8,150,000	0.14	399,400
Late run	12,730,000	0.28	1,243,700	9,600,000	0.10	341,600

[a] Final in-season MA as of October 7, 2014.

Run Size

As the season progressed, the FRP considered technical advice provided by the Pacific Salmon Commission and the Fraser River Panel Technical Committee members, and bilaterally adopted run sizes that reflected in-season assessment information.

The final in-season run size estimates were lower than the pre-season p50 forecasts for the Early Stuart, Early Summer and Late run management groups and higher for the Summer run management group.

Table 33. Pre-Season Forecasts vs. Final In-Season Run Size Estimates

Stock	Pre-Season Forecast			Final In-Season Estimate
	25% Probability	50% Probability	75% Probability	
Early Stuart	189,000	299,000	476,000	233,500
Early Summer	1,741,000	4,126,000	8,470,000	1,900,000
Summer	3,393,000	5,699,000	10,116,000	8,150,000
Late	7,465,000	12,730,000	22,059,000	9,600,000
Total	12,788,000	22,854,000	41,121,000	**19,883,500**

Diversion Rate

The annual diversion rate of sockeye through Johnstone Strait was much higher than forecast and estimated to be 96% (versus the 56% forecast preseason). The figure below outlines diversion rate estimates in 2014 relative to other cycle years.

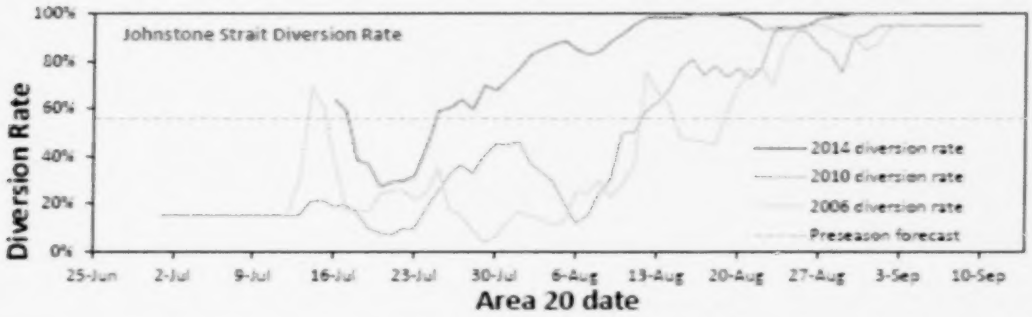


Figure 42. The 2014 Diversion Rate Compared to Recent Diversion Estimates for the 2014 Cycle.

Fisheries

There were directed harvest opportunities for Fraser sockeye in all fisheries including First Nations FSC, demonstration and economic opportunity fisheries; sport fisheries; and commercial fisheries. Fisheries targeting Fraser River sockeye were protracted, beginning in early July and continuing until mid-October.

Significant fisheries occurred on Early Summer, Summer and Late run sockeye. Management Adjustments remained similar to pre-season values which created more TAC for the latter management groups.

The Table 34 below outlines final in-season estimates of Fraser River sockeye catch in Canada and the U.S.

Table 34. Final In-season Estimates of Fraser River Sockeye Catch in Canada and the U.S.

Total Fraser Sockeye Caught [a]	**10,730,300**
Test fisheries (Panel Approved)	149,600
Canadian Catch	**9,885,700**
Canadian First Nation FSC fisheries- Marine	308,600
Canadian First Nation FSC fisheries- Fraser	578,000
Canadian commercial fisheries[b]	8,627,500
Canadian sport fisheries	367,600
Albion chinook test fishery	4,000
United States Catch	**694,400**
U.S. All Citizen fisheries	228,200
U.S. Treaty Indian fisheries	462,800
U.S. Treaty Indian C&S fisheries	3,400

[a] Final in-season catch as of October 1, 2014, from Fraser River Panel post-season meeting. The estimates do not include non-Fraser sockeye and are rounded to the nearest 100 fish.
[b] Includes First Nations economic opportunity and demonstration fishery harvests.

Total Allowable Catch

The TAC for Fraser sockeye is calculated using: run size estimates; the escapement plan; management adjustment; run timing; and estimates of test fishing catches. In-season, fisheries are planned using available in-season information and are generally not conducted based on pre-season forecasts.

In 2014, generally fisheries were planned in Canada targeting the stock aggregates with available TAC. Other stock aggregates that could constrain fisheries were harvested incidentally to levels identified in Canada's Escapement Plan. The following table shows the pre-season and final in-season total TAC (includes U.S. and Canadian TAC, and the Canadian Aboriginal Fisheries Exemption), and catch by aggregate.

Table 35. Final In-season Estimates of Fraser River Sockeye Catch as of October 6, 2014 in Canada and the U.S.

Stock	**Pre-season total TAC**[a]	**Final In-season total TAC**[b]	**Final In-season Catch**[c,d]
Early Stuart	69,800	22,600	25,600
Early Summer	2,010,400	927,700	810,500
Summer	3,438,900	4,813,200	4,500,500
Late	6,988,500	5,857,900	5,393,700
Total	**12,507,600**	**11,621,400**	**10,730,300**

[a] Includes U.S. and CDN TAC and the Canadian Aboriginal Fisheries Exemption amount of 400,000 fish.
[b] Includes the LAER of 10% for Early Stuart sockeye.
[c] Catch as of October 6, 2014 rounded to the nearest 100 fish.

The Table below outlines the final in-season TAC and catch for each country.

Table 36. Final In-Season TAC and Final In-season Catch as of October 6, 2014.[a]

Stock	Early Stuart	Early Summer	Summer	Late	Total
Test Fisheries[b]	2,800	26,900	79,700	40,500	150,000
U.S. Catch					
Commercial	0	19,600	209,000	462,400	691,000
C&S	0	600	1,900	900	3,400
U.S. Total	0	20,200	210,900	463,300	694,400
U.S. TAC[c]	0	143,400	765,400	936,100	1,844,900
CDN Catch					
Commercial	0	501,100	3,550,100	4,576,300	8,627,500
Sport	100	42,900	175,500	149,300	367,800
FSC	22,600	218,900	482,400	162,700	886,600
Other[d]	100	500	1,800	1,600	4,000
CDN Total	22,800	763,400	4,209,900	4,889,900	9,885,900
CDN TAC[e]	22,600	784,400	4,047,700	4,921,800	9,776,400

[a] Catch rounded to nearest 100 fish.
[b] Includes Fraser sockeye catch in Panel approved Test Fisheries in U.S. waters.
[c] TAC including payback.
[d] Other catch is sockeye captured in multi-species non-Panel approved test fisheries (Albion and Qualark).
[e] TAC (including AFE) as of October 30, 2014.

Fraser Sockeye Exploitation Rates

The Table below outlines pre-season exploitation rate expectations based on the p50 forecast, pre-season MAs, 2014 Total Allowable Mortality (TAM) rules, and the final in-season exploitation rate estimates based on final in-season estimates of run size and catch.

Table 37. Potential Exploitation Rates

	Pre-season [a]	Final In-season [b]
Early Stuart	26%	11%
Early Summer	50%	43%
Summer	61%	55%
Late	55%	56%
Cultus [c]	46%	53%

[a] ER is the max allowable ER based on 2014 TAM rules, pre-season pMAs, and the p50 forecast
[b] ER is based on 2014 TAM rules, in-season pMAs, the lower allowable ER, the final adopted in-season run size and in-season catch
[c] ER is assumed to be the same as similarly timed Late-run stocks

Post Season

Sockeye Migration and Escapement Estimates

Early Stuart sockeye did not experience high water conditions which have been an issue in recent years. However, the combination of below average discharge and warm air temperatures increased the water temperatures higher than normal, causing some concern for migratory conditions.

The 2014 preliminary escapement estimate for Early Stuart sockeye of 68,608 adults and 3 jacks is the second largest on record for this cycle year, similar to the brood year escapement (60,262), and almost double the long term cycle average (33,275). Spawning success for Early Stuart sockeye in 2014 is an estimated 66.7% (33.3% pre-spawn mortality), well below the long term average of 88.9%.

Early Summer run sockeye experienced high water temperatures and low discharge levels for the duration of their migration. The high temperatures and below normal discharge levels persisted for both the Summer run and Late run sockeye migrations into the river.

The 2014 preliminary escapement estimate for Early Summer run sockeye of 643,908 adults and 1,317 jacks is the second largest on record for this cycle year, and is 42% of the record 2010 brood year (1,523,307). The estimated spawning success for the Early Summer run aggregate in 2014 is 92.5%, which is above the long term average of 89.5%.

The Table below outlines the predicted escapement relative to the escapement goals at the final in-season sockeye run sizes. Spawning ground estimates for Summer run and Late run sockeye are currently not available.

Table 38. Preliminary Escapement Information to Date

Management Group	Escapement Goal @ final in-season run size [a]	Predicted Diff. Btw Estimates (DBE) [b]	Predicted Spawn. Escapement [c]	Prelim. Spawn. Escapement [d]
Early Stuart	108,000	-68%	66,600	68,608
Early Summer	665,000	-30%	767,300	643,908
Summer	2,852,500	-12%	3,201,300	Not Available
Late-run	3,360,000	-9%	3,818,100	Not Available
Total	***6,985,500***		***7,853,300***	

[a] Spawning Escapement Target based on adopted run size and Canada's escapement plan

[b] DBEs are calculated from Fraser Panel adopted proportional MA values

[c] Predicted spawning escapement: Run Size - Catch to date + DBE. In-season estimates as of Oct 30, 2014

[d] Preliminary adult spawning escapement estimates (does not include jacks). Preliminary Summer and Late spawning ground estimates will be available in Feb 2015

Post-season Catch Estimates

The current estimates of catch reported in the section above are final in-season estimates based on changes adopted by the Fraser Panel at a meeting on October 1, 2014. Discrepancies between the catch reported above and catch reported in the appendices will be resolved in January 2015, when stock identification estimates can be applied to any additional catch not accounted for as of October 1, 2014. Although the catch will likely increase, it is expected a small amount relative to catch currently reported.

Fraser River Pink

Pink salmon return to the Fraser River in significant numbers on odd years only; negligible numbers of pink salmon returned to the Fraser River in 2014.

Southern B.C. Aggregate Abundance-Based Management Chinook

Chinook fisheries are managed by either an aggregate abundance-based management (AABM) or individual stock-based management (ISBM) regime. Allowable harvest impacts in AABM areas are determined by provisions in the Pacific Salmon Treaty and subject to domestic considerations, such as conservation and allocation. In Southern B.C., all AABM chinook fisheries are located off the West Coast

Vancouver Island (WCVI), including components of the sport fishery, First Nations fisheries, and the Area G troll fishery.

For the period October 2013 through September 2014, the forecast chinook abundance index was 1.20 of the PST base period. Therefore, under treaty provisions, the maximum allowable catch was 205,400 chinook for WCVI AABM fisheries; which includes a 30% reduction consistent with the treaty provisions that came into effect in January 2009.

Of this total, 70,531 was the pre-season expected catch for the offshore sport and First Nations fisheries. The remaining 134,869 chinook were allocated to the commercial fisheries (Area G and T'aaq-wiihak).

Further considerations for managing chinook catch in WCVI AABM fisheries are driven by concerns regarding the low status of natural WCVI, Lower Strait of Georgia (LGS), Fraser River Spring 4_2, Spring 5_2, and Summer 5_2 chinook, and Interior Fraser coho populations.

Several ocean fisheries in Canada intercept WCVI origin chinook, including Northern troll, Haida Gwaii (Queen Charlotte Islands) sport, WCVI troll and WCVI sport. Ocean fisheries in Canada are limited to a 10% exploitation rate, even if PST provisions allow for a higher catch. Management measures are in place to reduce the impact of fisheries on WCVI origin chinook while still providing harvest opportunities.

Continued efforts were made in 2014 to limit the impact of the troll fishery on low status chinook populations, including time and area constraints, and limits on effort (boat-days) to protect stocks of concern.

AABM chinook catch and release information from all fisheries can be found in Table 55.

Table 39. Pre-Season and Post-Season Total Allowable and Preliminary Catch Estimates for October 2013-September 2014 WCVI AABM Chinook

	Pre-Season	**Post-Season**
WCVI AABM Abundance Index	1.20	under review
WCVI AABM chinook TAC*	205,400	under review
AABM Sport Catch	60,000	48,365
First Nations Catch (FSC)	5,000	2,124**
Maa-nulth First Nations Catch (FSC)	5,531	1,531**
T'aaq-wiihak Catch	17,263	17,172
Area G Troll Catch	**117,606***	110,005
Total AABM Catch	**205,400**	**178,558**

*The total Area G troll TAC is calculated as the difference between the WCVI AABM chinook TAC less offshore sport catch, NTC First Nations Expected FSC catch, Maa-nulth Domestic Allocation and T'aaq-wiihak Allocation.
**First Nations catch is preliminary.

Sport

The WCVI AABM sport chinook fishery primarily takes place in offshore Areas 121-127 from May to September. Catch and effort are largely driven by abundance and change annually; weather can also be a factor at certain times of the year. Management measures include a 77 cm maximum size limit in those portions of Areas 123-127 that lie shoreward of a line drawn 1-mile seaward of the surf line. This area is commonly referred to as the 'Chinook Conservation Corridor', and is in place to protect migrating WCVI origin chinook. In areas along the WCVI, where hatchery origin chinook are considered to make up a high

portion of the sport catch, anglers are permitted to retain two chinook per day of which one can be larger than 77 cm. The mandatory use of barbless hooks, and a daily limit of two chinook are also in place.

Chinook catch in the AABM sport fishery is estimated through several catch monitoring programs, including a creel survey, a logbook program and DFO's electronic survey information (iREC). The creel survey continues to be the most utilized catch monitoring program in this area particularly because it collects effort (number of boat trips), and catch per unit effort data. Catch for any given species within a defined time-area stratum is estimated by multiplying effort by CPUE. Total effort is estimated through vessel counts, gathered through either aerial or on-water boat surveys of the fishing area. CPUE is estimated from interviews with anglers at specific landing sites and from trip logbooks and manifests submitted by lodges and guides through a voluntary monitoring program. Data regarding the daily activity profile of the fishery, fishing locations, and the proportion of guided versus un-guided effort are also gathered from angler interviews.

Total sport catch and release in the 2014 WCVI AABM fishery was estimated to be 48,365 and 38,408 chinook, respectively, during the survey period (June to September). Previous sampling has indicated that there is minimal sport effort outside of this period and catch is expected to be low. Effort in the AABM area for 2014 was 28,650 boat trips.

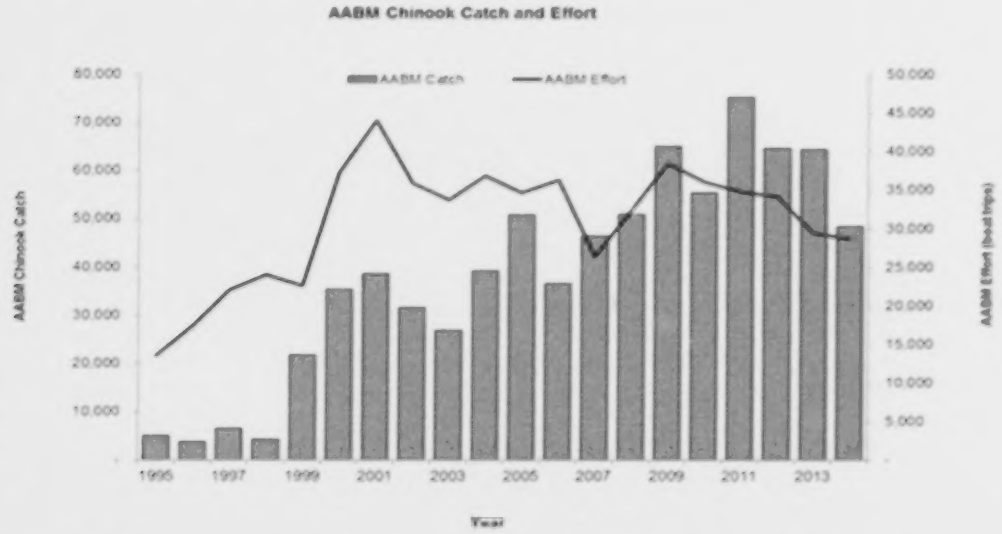


Figure 44. Preliminary Sport WCVI Chinook AABM Catch and Effort, 1995-2014

Table 40. 2014 Preliminary Estimates of WCVI Sport AABM Effort, Chinook Catch, and Chinook Releases by Area.

2014		AABM		
	Area	Effort	Chinook Kept	Chinook Releases
	Juan de Fuca (20W)			-
Inshore	Area 21	166	20	10
	Alberni Inlet (23)	5,966	-	-
	Barkley Sound (23)	7,123	8,095	8,803
	Clayoquot (24)	696	1,450	588
	Nootka (25)	-	200	-
	Kyuquot (26)	-	100	
	Quatsino (27)	392	485	
Offshore	Area 121	2,155	9,773	7,334
	Area 123	3,111	9,100	9,222
	Area 124	2,092	5,878	4,215
	Area 125	2,507	4,384	3,937
	Area 126	1,620	4,892	2,835
	Area 127	2,823	3,989	1,465
	Juan de Fuca		-	
	WCVI	**28,650**	**48,365**	**38,408**

First Nations

The 2014 WCVI Nuu-chah-nulth Tribal Council (NTC) AABM FSC chinook reported catch (to date) was 2,124, and catch from Maa-nulth Nations domestic fisheries was estimated at 1,531. Total AABM chinook reported for First Nations FSC and domestic fisheries was 3,655.

Commercial

After the completion of the April 2014 Chinook Technical Committee (CTC) chinook model calibration, the WCVI AABM Canadian allowable harvest was 205,400. The FSC harvest was set at 10,531; and the expected sport catch was 60,000, leaving 134,869 available for commercial harvest. The commercial TAC was apportioned with 87.2% to Area G Troll and 12.8% to the T'aaq-wiihak First Nations Demonstration fishery. The Area G Troll TAC was 117,606 chinook. The total estimated Area G troll catch was 110,005 chinook. The T'aaq-wiihak First Nations TAC was 17,263 chinook. The total estimated T'aaq-wiihak First Nations catch was 17,172 chinook.

For the 2013/2014 chinook year (October 2013 to September 2014), fisheries continued to be shaped by conservation concerns for the following domestic stocks: Fraser River Spring 4_2, Spring 5_2, and Summer 5_2 chinook, Interior Fraser River coho, WCVI origin chinook salmon, and LGS chinook.

Area G Troll Summary

The Area G Troll annual management plan is designed to maintain exploitation rates on stocks of concern within established limits, by the use of fishing time and area closures in conjunction with fishing effort limits. The management plan distributes catch and effort throughout the fishing year.

The management plan is subject to change as required to address specific conservation concerns as they arise. For the 2014 fishing season the following changes to annual fishing plan were implemented:

- Conservation measures introduced in the Area G troll fishery in 2011-12, to address low returns of Fraser River Spring 4_2, Spring 5_2, and Summer 5_2 chinook were implemented again in the 2013-14

season. For Area G troll that meant there was no June fishery and the July fisheries were delayed until the third week of July.

- To avoid exceeding the overall WCVI AABM TAC, 20% of the Area G TAC was allocated to September fisheries. If preliminary AABM catch estimates to August 31 indicate the overall WCVI AABM TAC may be exceeded, the Area G TAC set aside for September would be used to assist Canada with staying within its overall WCVI chinook TAC.

- Retention of all coho salmon by-catch was permitted in all openings between September 15 and December 31.

Area G Troll Fishing Periods

October to March period

During the period from October 1 to March 15, a harvest level of approximately 20% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area.

March 16 to April 18 period

A full time-area closure was maintained from March 16 to April 18 annually to avoid interception of Fraser River Spring 42 and Fraser Spring & Summer 52 chinook.

Late April/ mid-June period

During the period from April 19 to June 15, a harvest of approximately 40% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, total effort (boat-days) was limited to recent year averages, and areas of southwest Vancouver Island were closed until May 7 (partial openings from May 2 to 7), in order to avoid interception of Fraser River Spring 42, Spring 52, and Summer 52 chinook.

June 16 to July 23 period

A full time-area closure was maintained from June 15 to July 23 in Management Areas 125 to 127, and from June 16 to July 31 in Management Areas 123 to 124, to avoid interception of Fraser River Spring 42, Spring 52, and Summer 52 chinook.

July 24 through early August

During this period, a harvest of approximately 20% of the Area G annual TAC was recommended, based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. In addition, the fishery was managed to minimize mortality on wild coho through: a) a maximum interception of coho; and b) the mandatory use of large (minimum 6") plugs. As well, the fishery was managed to minimize mortality of WCVI origin chinook through the use of time-area closures of near shore areas ("Chinook Conservation Corridor"), where WCVI chinook stocks are prevalent.

September period

During the September period, a harvest of approximately 20% of the Area G annual TAC was recommended based on the PST chinook model calibration and assigned harvest levels for the outer WCVI area. The Area G harvest level in September has the potential to increase if there is available remaining WCVI AABM TAC after accounting for First Nation FSC and sport fisheries. However, if First Nations or the sport sectors

catches are larger than projected, the available commercial TAC is reduced. During harvest opportunities between September 15 and December 31 retention of coho by-catch was permitted.
For all troll fisheries, selective fishing practices were mandatory, including single barbless hooks and revival tanks for resuscitating non-retention species prior to release.

Since 1999, a major objective for the management of the WCVI troll fishery has been to distribute the catch throughout the fall-winter-spring-summer periods. This objective was continued in 2013/2014.

The late July and August plug fisheries were monitored to determine encounter rates of other species and estimate numbers of released chinook. Biological sampling was conducted for size distributions, and stock compositions (Coded Wire Tags, DNA and otolith samples).

Table 41. Post-Season Preliminary Monthly Catch Estimates for 2009/10 to 2013/14 WCVI AABM Chinook Area G Troll Fisheries

	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010
October	2,358	3,344	0	0	0
November	28	230	57	0	0
December	25	312	188	0	0
January	49	1,018	129	0	0
February	586	358	542	1,849	0
March	1,422	501	243	875	0
April	13,345	1,374	10,493	8,670	8,553
May	40,336	25,737	22,334	41,239	31,296
June	0	0	0	34,394	23,652
July	26,494*	0	0	15,619*	0
August	10,002*	0	4,280*	21,284*	11,642*
September	15,360	2,519	17,264	0	3,980
Total	**110,005**	**35,393**	**55,530**	**123,930**	**79,123**

*Plug fishery.

T'aaq-wiihak First Nations Demonstration Fishery Summary

In addition to fishing opportunities for FSC purposes, DFO acknowledges that in *Ahousaht Indian Band et al. v. Canada and British Columbia*, the courts have found that five Nuu-chah-nulth First Nations located on the West Coast of Vancouver Island - Ahousaht, Ehattesaht, Hesquiaht, Mowachaht/Muchalaht, and Tla-o-qui-aht – have "aboriginal rights to fish for any species of fish within their Fishing Territories and to sell that fish, with the exception of geoduck".

Part of this consultation and negotiation process involved the continuation of an AABM chinook salmon demonstration fishery for the 2014 fishing season. The fishery was carried out in portions of statistical Areas 24, 25, 26, 124, 125 and 126 on the west coast of Vancouver Island discontinuously between May 1 and September 30, 2014. Total catch estimated for the fishery was 17,172 chinook.

The fishery was monitored by T'aaq-wiihak fishery monitors, independent observers and DFO staff. Biological samples for DNA, and heads from salmon indicating presence of a coded wire tag, were collected by J.O. Thomas and Associates, a company which provides independent, certified verification services.

Southern B.C. ISBM Chinook

In addition to the PST regime, Canada implemented management actions as required to ensure conservation of Canadian origin chinook and to meet domestic allocation requirements. These chinook fisheries were managed to harvest rates on an individual stock basis (ISBM).

Measures were taken in 2014 in First Nations FSC, sport and commercial chinook fisheries to protect WCVI, LGS, Fraser River Spring 4_2 Spring 5_2 and Summer 5_2 chinook stocks. FSC management actions included time and area closures and reduced fishing times. Sport measures included barbless hooks, time/area closures, size restrictions and mark selective fisheries. Commercial measures included barbless hooks, time and area closures, gear restrictions, mandatory use of revival tanks, daily catch reporting, mandatory logbooks, hailing catches on a regular basis, and independent on-board observers on vessels when requested. Post-release mortality information for chinook included in ISBM management was determined from studies conducted in 2000-2001.

Specific management actions were taken to protect WCVI origin chinook in Canadian ocean fisheries (not including enhanced terminal areas), the harvest of which was restricted to an exploitation rate of 10%.

Most Southern B.C. commercial fisheries were regulated so that impact on WCVI wild chinook stocks was minimized, with the exception of terminal sport, commercial and First Nations FSC fisheries.

LGS chinook stocks are improving from historic lows seen in 2009 and are rebuilding slowly. Significant management measures in the sport and commercial fisheries continued to be in place throughout 2014 to protect these stocks. Some LGS chinook stocks are seeing a gradual increase in terminal returns, particularly in the Cowichan River, which is encouraging; however, their productivity and Salmon Outlook category remains low.

Fraser River Spring 4_2 Spring 5_2 and Summer 5_2 chinook stocks had specific management measures in place to reduce exploitation in FSC, sport and commercial fisheries. FSC management actions in the Fraser River included time and area closures, and reduced fishing times. Sport fisheries in Juan de Fuca Strait, the Strait of Georgia and the approach waters of the Fraser River had specific time, area, size and mark selective restrictions designed to minimize the amount of exploitation on these chinook stocks. Fraser River tidal and non-tidal sport fisheries had delayed start up times, implemented to protect Fraser River Spring 4_2 Spring 5_2 and Summer 5_2 chinook stocks. Commercial troll fisheries on the WCVI were also managed with time and area closures in 2014 for Fraser River Spring 4_2 Spring 5_2 and Summer 5_2 chinook stocks.

ISBM chinook catch and release information from all fisheries can be found in Table 56.

Sport

West Coast Vancouver Island

WCVI sport ISBM fisheries are managed to fall within Canada's 10% exploitation rate on WCVI wild chinook. To help achieve this, objective restrictions are put in place along the coast in areas known to be the main WCVI chinook migratory routes – this is known as the Chinook Conservation Corridor, an area one nautical mile seaward of the surf line, extending from Areas 123 to 127. The majority of WCVI chinook >77 cm that are caught in the sport fishery are mature females, and starting July 15 in those waters north of Estevan Point and August 1 for those waters south of Estevan Point, the retention of chinook >77 cm is not permitted. In terminal areas closer to production hatcheries (Nitinat, Barkley Sound, Nootka Sound) where hatchery chinook make up a significant part of the catch, these restrictions are reduced and the retention of one chinook >77 cm is permitted. These restrictions expire after September 30 and October 15, north and south of Estevan Point respectively, when most of these chinook are considered to have migrated into the coastal river systems. Other management measures in effect to reduce sport impacts on chinook include barbless hooks, a minimum size limit, a daily limit and an annual limit.

Table 42. Estimated WCVI ISBM Sport Effort, Chinook Catch and Release by Area in 2014.

2014		ISBM		
	Area	Effort	Chinook Kept	Chinook Releases
	Juan de Fuca (20W)	6,813	5,597	2,560
Inshore	Area 21	296	114	28
	Albemi Inlet (23)	6,218	3,419	305
	Barkley Sound (23)	7,807	6,799	3,677
	Clayoquot (24)	276	91	162
	Nootka (25)	10,752	15,581	13,739
	Kyuquot (26)	254	326	740
	Quatsino (27)	2,182	2,370	957
Offshore	Area 121			-
	Area 123			-
	Area 124			-
	Area 125			-
	Area 126			-
	Area 127			-
	Juan de Fuca	**6,813**	**5,597**	**2,560**
	WCVI	**27,785**	**28,701**	**19,608**

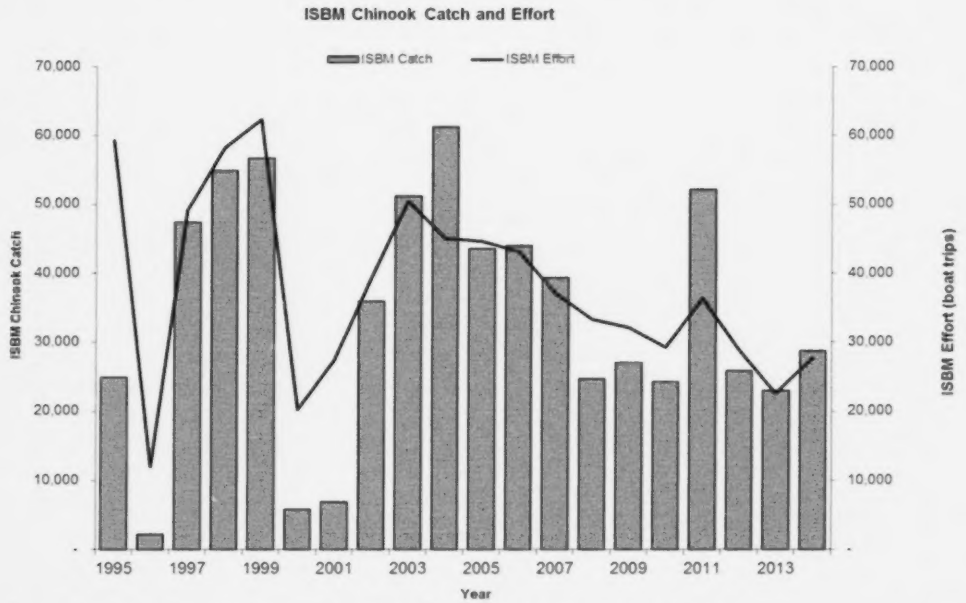


Figure 45. Sport WCVI Chinook ISBM Catch and Effort, 1995-2014

West Coast Vancouver Island Terminal Areas

Somass/ Stamp

During 2014 there was a non-tidal opening on the Somass/Stamp River (Area 23) with chinook retention from August 25, 2014 to December 31, 2014. The daily limit was two chinook of which one may be greater than 77 cm. The Somass/Stamp Rivers were not monitored by creel survey during 2014.

Nitinat

During 2014 there was a planned non-tidal opening for the Nitinat River (Area 22) from August 25, 2014 to September 30, 2014. The daily limit was two with only one greater than 77 cm. The salmon fishery was closed for retention of chinook from October 1 until October 15 to protect chinook salmon during the peak spawning period. The salmon fishery re-opened from October 16 until December 31 with non-retention of chinook salmon. The Nitinat River was not monitored by creel survey during 2014. The area above Parker Creek was closed to fishing.

Conuma

During 2014 there was a non-tidal opening for the Conuma River (Area 25) from August 25, 2014 to December 31, 2014. The daily limit was two with only one greater than 77 cm. The Conuma River was not monitored by creel survey during 2014.

Inside Areas: Strait of Georgia, Johnstone Strait, and Juan de Fuca Strait

2014 sport fisheries in these areas were designed to minimize impact on returning Fraser River Spring 4_2, Spring 5_2 and Summer 5_2 chinook. Management measures put in place to protect these stocks included mark selective fisheries and size limits in specific areas/times.

In those waters near Victoria between Cadboro Point and Sheringham Point (Areas 19-1 to 19-4 and Area 20-5), retention regulations were adjusted from March 1 to June 13 where anglers were permitted to retain two chinook per day either wild or hatchery marked between 45 cm and 67 cm or hatchery marked only chinook over 67 cm in length. From June 14 to July 18 the daily limit remained at two wild chinook of which one could be greater than 67 cm.

The Strait of Georgia "chinook corridor" extending from Subareas 18-1 to 18-6, 18-9, 18-11, 19-5 and a portion of 29-4 and 20-5 that lies south from a point on the east side of Valdes Island and extending 57 degrees true for 5 nautical miles remained in place in 2014. In this corridor the daily limit was two chinook with a minimum size of 62 cm of which only one could be over 67 cm from May 4 to July 18.

Concern for Cowichan River chinook also prompted a restriction in Subareas 18-6 and 18-7 and 19-7 to 19-12. These areas saw chinook non-retention measures in effect from August 1 through October 15. Additionally, a portion of Subareas 18-7 and 18-8 east of a line from Separation Point to Wilcuma Wharf in Cowichan Bay, across Satellite Channel to Saltspring Island was closed to all finfish fishing from August 1 through October 15. Cowichan Bay west of the Separation/Wilcuma line was closed to all finfish fishing from August 1 through October 31.

For the Johnstone Strait and Strait of Georgia areas chinook management measures also included an annual limit of 15 chinook, a daily limit of two chinook and a minimum size limit of 62 cm. For the Canadian portion of Juan de Fuca Strait south of Cadboro Point, regulations included an annual limit of 20 chinook, a daily limit of two chinook and a minimum size limit of 45 cm.

In 2014 marine sport fisheries were monitored by creel surveys in three main areas; 1) Juan de Fuca including Victoria (south of Cadboro Point) and Juan de Fuca Strait through Subareas 20-1; 2) Portions of the Strait of Georgia including Areas 14 through 18, that portion of Area 19 north of Cadboro Point, Areas 28 and 29; and 3) Johnstone Strait including Areas 11 to 13. Monitoring of the Strait of Georgia sport fishery took place from June-October (not all areas were surveyed every month), and Juan de Fuca Strait sport fishery (February to October) has been fairly consistent from year to year using an access point (landing site) survey for collecting catch, CPUE, and biological information combined with an aerial survey for effort counts. In addition, logbook programs, directed at estimating the sport catch by fishing guides during guided trips, were conducted in the Campbell River and Victoria Areas in 2014. The

Johnstone Strait creel survey commenced in Area 13 in May and continued through until the end of September, and from June through August to included Areas 11 and 12.

Effort, catch and release information from marine fisheries are summarized in Table 43.

Strait of Georgia, Johnstone Strait, and Juan de Fuca Strait Tributaries

Restrictions were also in effect on many tributaries within the Strait of Georgia, Johnstone Strait and the Strait of Juan de Fuca. The Qualicum River provided some opportunity to harvest enhanced stocks.

The Qualicum River opened for chinook on August 1 for four per day less than 62 cm. On September 26 the regulation was changed to four chinook per day of which 2 could be greater than 62 cm. The Little Qualicum River was open from October 1 until November 30 with a daily limit of one. In both systems there was a minimum size limit of 30 cm, anglers were restricted to the use of single barbless hooks, with a maximum hook size of 15 mm. There was an annual limit of 10 chinook salmon greater than 50 cm. No catch monitoring effort is directed at these fisheries.

Fraser River and Tributaries

Fraser River Spring 4_2 Spring 5_2 and Summer 5_2 chinook stocks of concern entering the Fraser River in Subareas 29-6, 29-7, 29-9 and 29-10 required additional management measures again in 2014 due to continued concerns about stock status. Starting May 1 to July 15 the daily limit for chinook was zero. The daily limit was two chinook (wild or hatchery marked) between 62 cm and 77 cm from July 16 to July 27. From July 28 to December 31, the daily limit was two chinook (wild or hatchery marked) with a minimum length of 62 cm.

Tidal Fraser and Region 2 Fraser River:

In the tidal and the non-tidal waters (Region 2) of the Fraser River there was no fishing for salmon from January 1 to July 15. From July 16 to July 27, the daily limit was one less than 77 cm. The minimum size limit for chinook in the Fraser River is 30 cm. After July 27, the daily limit was four chinook per day with only one over 50 cm allowed to be retained. From September 1 to December 31 the daily limit for wild or hatchery marked chinook salmon was four with only one over 62 cm.

Fraser River Tributaries:

In addition, there were several tributaries to the Fraser River in which chinook retention was permitted including:

- Alouette River: daily limit of one chinook from July 1 to December 31;
- Chehalis River: daily limit of four with only one over 50 cm from June 1 until August 10 and a daily limit of four chinook with only one over 62 cm from September 16 until December 31;
- Chilliwack/Vedder River: daily limit of four with only one over 62 cm from July 1 until December 31;
- Coquitlam River: daily limit of one chinook from July 1 to December 31; and
- Harrison River, daily limit of four with only one over 62 cm from September 1 until December 31.

Tributaries to the Fraser River above Sawmill Creek in which chinook retention was authorized included:

Region 3 - Fraser River

Fraser River: No fishing for salmon from January 1 until July 15. From July 16 to September 16, daily limit of four chinook per day, none over 50 cm, except for the following two exemptions:

1. Bridge River downstream of the Road 40 Bridge and the Fraser River from the Bridge River to the B.C. Railway Bridge north of Lillooet, daily limit of one chinook during the following time frames:

    - Tuesday, June 17 to Thursday, June 19 2014 (06:00 hours to 21:00 hours daily);

    - Sunday, June 22 to Thursday, June 26, 2014 (06:00 hours to 21:00 hours daily); and

    - Sunday, June 29 to Thursday, July 3, 2014 (06:00 hours to 21:00 hours daily).

2. Fraser River from the confluence of Fraser River and the Seton River downstream to fishing boundary signs located on both sides of the Fraser River approximately 4km downstream of the town of Lillooet, daily limit of four chinook, one of which may be greater than 50 cm from August 15 to September 29.

Region 3 - Fraser River Tributaries

- Clearwater and North Thompson: July 16 to July 31, catch and release of chinook only. August 1 to August 21, daily limit of one chinook with a monthly limit of two chinook from the two rivers combined.

- Thompson River downstream of the confluence of the North and South Thompson rivers: No fishing for salmon until July 15. From July 16 to August 21, daily limit of four chinook, none over 50 cm.

- Kamloops Lake and the Thompson River from Kamloops Lake downstream to Goldpan: August 22 to October 20, daily limit of four chinook, only one over 50 cm.

- Thompson River: Goldpan to the Fraser, chinook, none over 50 cm, September 6 to September 30.

- South Thompson River: August 22 to September 22, daily limit of four chinook, only two greater than 50 cm. There is a monthly quota of six chinook from the South Thompson River.

Region 5A

- Cariboo River: July 25 to August 16, daily limit of one chinook between 30 cm and 77 cm. Note: this system was closed between August 5 and August 13 due to concerns for safety following the Mt. Polley spill.

- Chilko River: July 25 to August 16, daily limit of one chinook between 30 cm and 77 cm.

- Quesnel River: July 15 to September 1, daily limit of one chinook between 30 cm and 77 cm. Note: this system was closed between August 5 and August 13 due to concerns for safety following the Mt. Polley spill.

Region 7

- Bowron River: July 15 to August 15, daily limit of one chinook between 30 cm and 77 cm.
- Nechako River: August 15 to August 27, daily limit of one chinook between 30 cm and 77 cm.

Region 8

Note: there is a monthly limit of four chinook in Region 8.

- Mabel Lake and Lower Shuswap River: July 25 to August 15, daily limit of one chinook between 30 cm and 77 cm. August 16 to September 12, daily limit of four chinook per day, only two greater than 50 cm.
- Middle Shuswap River: July 25 to August 15, daily limit of one chinook with a minimum size limit of 77 cm.

Table 43. Preliminary Catch and Effort Estimates for Southern B.C. Inside Sport ISBM Fisheries in 2014.

Fishing Area	Survey Period	Chinook Kept	Chinook Released	Effort (Boat Trips)
Strait of Georgia	Jun - Oct	31,313	32,219	67,583
Johnstone Strait	Jun - Aug	9,717	8,109	14,486
Juan de Fuca Strait	Feb- Oct	15,513	11,997	45,344
Fraser River	Jul - Oct	13,228	9,888	n/a
TOTAL		**69,771**	**62,213**	**127,413**

First Nations

WCVI FSC and Economic Opportunity Fisheries

In 2014 an agreement was reached with the Hupacasath and Tseshaht First Nations for an Economic Opportunity fishery. There was an opportunity for a limited commercial opening during daylight hours in 2014. It was not successful due to low return and timing; the total catch was 13 chinook. Due to concerns of exceeding their TAC no further Economic Opportunity fisheries were prosecuted for chinook. The Hupacasath and Tseshaht First Nations FSC allotment for chinook was 1,500 pieces. A total of 862 pieces were harvested mainly as by-catch during coho fisheries. Catch reports for Maa-nulth domestic harvest indicate a combined ISBM FSC chinook harvest of 67 pieces. NTC First Nations ISBM catch reported to date was 1,000 pieces.

WCVI Excess Salmon to Spawning Requirements (ESSR) Fisheries

The Tseshaht and Hupacasath First Nations were issued a joint Excess Salmon to Spawning Requirements (ESSR) Licence for chinook at the Robertson Creek Hatchery facility. The total catch was 7,062 chinook (including jacks).

The Ditidaht First Nation was issued an ESSR License for chinook at Nitinat Lake and the Nitinat Hatchery. The catch was 20,998 chinook. The total catch for both ESSR fisheries was 28,060 chinook.

WCVI T'aaq-wiihak First Nations Demonstration Fishery

As described in section 6.3, five Nuu-chah-nulth First Nations on the WCVI participate in a T'aaq-wiihak First Nations demonstration fishery. In 2014, the demonstration fishery included an ISBM [illegible]ook fishery.

The 2014 preseason forecast of Burman chinook predicted an abundant return of 9,000 fish. The sharing arrangements for this amount was discussed at the multi-sectoral Area 25 harvest roundtable meetings between the First Nations, sport and the commercial Area D gill net harvesters. A T'aaq-wiihak First Nations demonstration fishery was planned with an allocation of 3,500 Burman chinook to be harvested in Matchlee Bay the total catch in the demonstration fishery was 2,453 chinook using both hook and line and gill nets.

Strait of Georgia FSC Fisheries

Data are still being compiled on various First Nations catches in the Strait of Georgia; however, preliminary catch is estimated at 28 chinook.

Strait of Georgia ESSR Fisheries

There was an ESSR fishery targeting chinook at the Big Qualicum hatchery; the total harvest, including FSC, was 3,722 chinook. There was also an ESSR harvest on the Cowichan River that targeted chum, but also encountered and released 25 chinook salmon.

Johnstone Strait FSC Fisheries

Data are still being compiled on various First Nations catches in Johnstone Strait; however, preliminary catch is estimated at 1,637 chinook. There were no economic opportunity fisheries.

Fraser River FSC, Economic Opportunity and Inland Demonstration Fisheries

FSC fisheries, economic opportunity and inland demonstration fisheries took place in the Fraser River in 2014, harvesting ISBM chinook in both the upper and lower reaches of the Fraser River.

There are currently three Inland Commercial Fishing Enterprises (CFE) operating in the B.C. Interior (BCI): Okanagan Nation Alliance, Upper Fraser Commercial Fishing Enterprise and Riverfresh (Secwepeme Fisheries Commission). Riverfresh is the only CFE that receives allocation for chinook in the BCI; they operated a shallow purse seine fishery from August 25 to October 12 on Kamloops Lake targeting Fraser sockeye and South Thompson 4_1 chinook were also harvested. Riverfresh was allocated 5,200 chinook for the 2014 season.

In total, approximately 4,835 chinook were harvested in the upper Fraser River (above Sawmill Creek) in FSC fisheries (2,811 adults) and demonstration fisheries (1,555 adults and 469 jacks).

The total chinook harvested in the lower Fraser River (below Sawmill Creek) was 36,374; including FSC (19,203), economic opportunity/demonstration (6,498) and ESSR (10,073) harvests. In 2014, during the sockeye economic opportunity and demonstration fishery, chinook were authorized for retention except when the Fraser Fall 4_1 began their presence in the Lower Fraser in Early September. Retention of chinook was not permitted during the chum economic opportunity and demonstration fisheries.

Commercial

In 2014 there were commercial fisheries in Barkley Sound and Nootka Sound which targeted ISBM chinook.

Area B Seine

No seine fisheries occurred for WCVI ISBM chinook in 2014.

Area D Gill Net

In 2014, one gill net fishery occurred in Alberni Inlet targeting chinook returns to Robertson Creek Hatchery. It occurred on September 8 for 4 hours. The fishery was not successful, with a catch of only 4 pieces. Four vessels participated in the fishery.

There was an incidental catch of chinook during the Area D sockeye fishery in June and July with 668 chinook retained and 65 released.

In 2014, gill net fisheries occurred in Tlupana Inlet targeting chinook returns to Conuma River hatchery. Area D gill net openings in Tlupana Inlet occurred on August 13, 20 and 27 for a total chinook catch of 18,418.

Stock Status

Fraser River and Area Chinook

Interior Fraser

Spring chinook returns to the Fraser rebounded somewhat in 2014. Preliminary indications are that returns to the Spring 5_2 aggregate spawner abundance was greater than the 2009 parent brood. Concerns continue to exist for some populations including the Upper Chilcotin River, and the Chilako River.

Returns to the Spring 4_2 aggregate again improved considerably over parent brood levels in 2010, however the aggregate total escapement was still low compared to escapements in the early 2000's. Concern still exists for returns to the Deadman River and Louis Creek.

Yearling (stream-type) summer chinook (Summer 5_2 aggregate) returns were mixed. Some populations including Chilko and Nechako exceeded parental escapements, while others such as Clearwater failed to achieve 50% of parent escapement. On average across the Management Unit (MU), returns were slightly more abundant than the parent brood year escapements.

The South Thompson ocean-type 4_1 aggregate declined after rebounding in 2013. All stocks failed to achieve brood escapement levels, and on average, the MU only achieved 55% of the parental escapement observed in 2010.

Lower Fraser River

Spring:
Lower Fraser Spring chinook returns were also mixed. Preliminary estimates of returns to Birkenhead River improved over last year, but only achieved 60% of parental brood levels. No estimates are available for the upper Pitt River (Blue Creek).

Summer:
Summer chinook returns to Maria Slough were approximately 350; fewer than observed in the parental brood year (~590). Information for other Lower Fraser summer populations is not available at this time.

Fall:
Annual lower Fraser River fall chinook stock group escapements are, on average, large (>100,000). The major contributor and principal focus of assessment of this stock group is chinook returning to the Harrison River, and Harrison River transplants to the Chilliwack River. For both the Harrison and Chilliwack rivers, the field study portions of the escapement assessments are just concluding, and data entry and analyses have not started. Field estimates for Harrison indicate escapements are likely to be under 75,000 adults.

No in-season estimates have been developed at Chilliwack, and the preliminary escapement estimates will not be available for either system until early January.

Howe Sound/Squamish River

No information is available at this time.

Burrard Inlet

No information is available at this time.

Boundary Bay

No information is available at this time.

Strait of Georgia Chinook

Fall:
Total returns to Strait of Georgia streams north of Nanaimo, virtually all of which are enhanced, have been stable for the last fifteen years. In general, 2014 chinook escapements were similar to or higher than 2013 in this area. Englishman and Little Qualicum spawner abundances declined slightly and Puntledge and Qualicum Rivers increased in spawner abundance, especially at Qualicum, where the year over year abundance doubled from the previous year.

In the southern Strait of Georgia, total returns have been on a decreasing trend over the last 25 years. Specifically, the Nanaimo River chinook abundance has been generally stable since 1995 and the Cowichan River chinook abundance has decreased since the very high escapements in the 1990s to the low in 2009. Since that year the spawner abundances have slightly increased to approximately half of the long term average. In 2014, the Nanaimo River chinook abundance decreased by about 30% from the previous year. Goldstream and Chemainus River chinook continue to have very low numbers of spawners.

Cowichan River chinook (a wild chinook indicator stock) has been in decline since 1995-1996 and reached a low total adult return to river of 1,260 in 2009. This population continues to be a stock of concern. Exploitation rates on Cowichan chinook were historically high (averaging 80-90%), declined to a low of 34% on the 1995 brood year, and steadily increased to 75% on the 2000 and 2001 brood years. Various harvest restrictions have been put into effect over the last 20 years to reduce exploitation on Strait of Georgia chinook. Additional conservation measures were introduced in 2005 to reduce the harvest of Cowichan chinook by the Strait of Georgia sport and WCVI troll fisheries. First Nations have substantially reduced harvests of chinook in the Cowichan River in recent years. The declining trends since 1990 in various southern Strait of Georgia Rivers are attributed to high exploitation rates, a decline in marine survival, and habitat issues.

In 2014, chinook escapement to Cowichan River decreased from the previous year. The preliminary analysis from the enumeration project is an estimate of 4,767 spawners and 405 brood stock taken for the Cowichan River Hatchery. Approximately 75% of the spawners are age 3+ ('adults') and the other 25% are age 2 ('jacks' and 'jills'). Water levels were low until mid-October which delayed upstream migration until fall storm events and higher flows motivated the chinook to migrate upstream to the spawning areas. Close monitoring of the lower river for pre-spawn mortalities during the low discharge yielded very few samples. In addition to the 405 chinook used for brood at the hatchery, 239 surplus brood were released upstream and 224 were transported upstream in a Trap and Truck process. The number of chinook caught in local First Nation FSC fisheries has not yet been reported.

On the mainland side of the northern Strait of Georgia, Sliammon and Lang hatcheries continue to have variable returns, however in the last five years the returns to Lang Creek have been stronger than in previous years. There are a few very small, wild populations remaining in the Theodosia and Skwakwa rivers, and those rivers entering Jervis Inlet, where assessment data are poor or not available. Historically, a large proportion of the chinook stock aggregate originating from rivers north of Nanaimo migrate into central and northern B.C. and Alaska. Exploitation rates on this stock aggregate have gradually been reduced over the last 15 years, thus the stable trend in annual returns to rivers over this period suggests a reduction in marine survival.

Spring/Summer:
Of the three early runs in the Strait of Georgia, assessment data are available for Puntledge and Nanaimo; the Cowichan summer run still exists but it is small and quantitative data are not available for that stock. Efforts to recover Puntledge summers to viable levels have resulted in improved returns to the river since 1999. The 2006 and 2007 natural spawning escapements ranged from 200 - 500 adults (not including brood capture), which is down from the record high in 2005 of approximately 2,500 adults, but is substantially higher than escapements recorded in the previous decades. The preliminary estimate for 2014 escapement to Puntledge is approximately 1,176 adults which continues the increasing abundance trend over the past three years. Monitoring of Nanaimo spring and summer chinook escapement has occurred less frequently. This year's escapement of Nanaimo summers is estimated to be about 450 chinook adults, which is below average for the last 15 years.

West Coast Vancouver Island Chinook

The status of wild WCVI origin chinook has remained low for several years. Those populations that are not enhanced have remained well below target or declined since major El ***Niño*** events in the mid-1990s. Populations in the southwest Vancouver Island area (e.g. Area 24 and southward) tend to be lower status than those populations in the northwest Vancouver Island area.

For WCVI hatchery stocks, the terminal return is defined as total catch (First Nation FSC, sport and commercial) in the near approach areas of the hatchery plus escapement (brood collection plus natural spawners). In these approach areas, catch is dominated by the hatchery stock (e.g. >95%), therefore, higher exploitation rates are permitted than in times and areas dominated by naturally produced WCVI chinook stocks.

The preliminary total terminal return of Stamp River/Robertson Creek hatchery chinook was approximately 30,000 adults, consistent with the pre-season forecast of 30,000. The preliminary escapement through Stamp Falls is 15,512 adult chinook. The total terminal return to the Conuma River hatchery system was about 80,000 compared with a pre-season forecast of 90,000. The total terminal return to the Nitinat River hatchery system was about 36,000, compared with a pre-season forecast of 50,000.

Johnstone Strait/Mainland Inlet Chinook

Currently only three systems are monitored consistently in Areas 12 and 13. The Nimpkish River is assessed using standardized swim surveys and stream walks by hatchery staff. An intensive mark-recapture program is carried out by Quinsam Hatchery to estimate escapement on the Campbell/Quinsam system. A mark-recapture program has been in development over the past few years on the Phillips River, with the plan to eventually establish it as a mainland chinook indicator. Other systems are covered using intermittent visual surveys.

Nimpkish River

In 2014, the coverage of the chinook timing was greatly impacted by flow conditions during October, which made coverage of the watershed difficult. Only one peak count is available for 2014 of 900 individuals,

observed on November 18 at the main spawning areas downstream of Woss Lake. Prior to this date, hatchery staff were very successful in collecting 70 females and 61 males for enhancement. The preliminary escapement estimate of just over 1,000 individuals is likely an underestimate as it is based on only the one peak count (plus removals). Comparison of this count with those from the same time frame of past years (with more comprehensive coverage) demonstrates a return not as strong as the last two years. 2012 and 2013 were the largest escapements in the last 20 years; however, 2014 is likely a continued improvement over the low but stable returns seen prior to 2012, which averaged around 600 adults.

Campbell/Quinsam System

The Campbell/Quinsam, a long-term chinook indicator, has been assessed by carcass mark-recapture since 1984. Preliminary results for the 2014 program have the combined system chinook estimate at 3,000-3,500 adults; a further decline in escapement compared to the previous two years. Higher than normal flows limited carcass recovery on both systems throughout most of the mark-recapture program. This will impact the confidence levels attributed to the final evaluation of spawning escapement for this stock.

Quinsam Hatchery fell short of attaining their chinook brood stock target, capturing approximately 80% of the required fish. The early onset of high river levels in mid-October in combination with a low return hampered seining efforts on the Quinsam.

Phillips River

Preliminary results from the mark-recapture program on the Phillips River indicate the chinook escapement is in the range of 2,500 adults, a continuation of the strong trend of the past few years. A dry summer and low flows contributed to a successful program; however, the high water levels of October curtailed the dead pitch program in early October.

The local hatchery was again successful in meeting its brood target, and plans to release 150,000 coded wire tagged chinook smolts next spring to contribute to the assessment program.

Southern B.C. Coho

Coho stocks in Southern B.C. are managed domestically and through international Abundance Based Management provisions which are outlined in the Pacific Salmon Treaty. Harvest levels are outlined in the Treaty's Southern Coho Management Plan, which provides maximum exploitation rates dependent on abundance, and it is Canada's responsibility to ensure that its domestic stocks are not harvested beyond the maximum exploitation rate as outlined in the Treaty.

In Southern B.C., coho management measures in commercial and sport fisheries are implemented based on their impacts to specific stocks. Southern B.C. coho management is primarily based on managing Interior Fraser River, Lower Fraser, Georgia Strait, Johnstone Strait and WCVI coho stocks or MUs.

Coho management measures varied in Southern B.C. in 2014, depending on the area of harvest and impact on specific coho stocks.
Beginning in 1997, DFO implemented a number of fishery management measures to reduce the harvest impacts on Interior Fraser River coho, with more severe measures being implemented starting in 1998. Since that time, Canadian fisheries impacting these stocks have been curtailed to a targeted exploitation rate of 2 to 3 percent (currently up to 3 percent), with an additional 10 percent permitted in U.S. fisheries (as per the Pacific Salmon Treaty management regime).

While the status of Interior Fraser coho stocks has generally remained poor in spite of the 13 percent total exploitation rate limit, there are indications in recent years that their condition might be improving. In addition, there have been improved returns of coho in Northern B.C., the west Coast of Vancouver Island

and inside Georgia Strait stocks in recent years. In 2013, there were significant numbers of jack coho throughout southern B.C. and marine indicators have been positive resulting in many of the stock groups with Outlook ranks of 3 (near target) or 4 (abundant). As a result, DFO undertook a scientific review of available stock and fishery information under the auspices of CSAS to determine the extent to which stock status has improved and the degree to which this might affect allowable exploitation rates on Interior Fraser coho for the 2014 fishing season.

The aggregate wild coho escapement (generation 2010-2012) to the Interior Fraser River watershed averaged 36,000 adults (geometric mean). This is an increase over previous generational averages since conservation measures were implemented in 1997-1998. Based on analysis of the returns and exploitation rate (ER) analysis a decision was made to increase the ER from 3 percent to a maximum of 16 percent for Canadian fisheries in Southern BC. Under this regime the U.S. ER could increase from 10 to 12 percent. For Canadian fisheries, management measures were relaxed for FSC fisheries in the BC Interior and the lower Fraser including mainstem areas. In the marine sport fishery, retention of additional enhanced coho and in some areas and times retention of one unmarked coho was allowed in some South Coast areas, while in freshwater fisheries a small reduction of the coho window closure occurred to allow for additional retention of marked coho. Commercial fisheries, including First Nation economic, demonstration and commercial fisheries, were not permitted to retain coho in most southern BC waters. Additional fishing effort for more abundant stocks and species was permitted resulting in increased impacts on coho as release mortalities in these fisheries.

No specific management measures were in place in 2014 to protect Georgia Strait coho stocks beyond measures put in place for Interior Fraser River coho.

Management measures in place for WCVI coho provided opportunities for increased sport and commercial fisheries, with full harvest opportunities in WCVI areas where Interior Fraser coho were not considered to be impacted. These were largely terminal opportunities in portions of Areas 23-27, where stock composition information showed that Interior Fraser River coho were not found.

In WCVI areas/times where Interior Fraser River coho are known to be prevalent, non-retention of unmarked coho remained in effect. Adjustments were made in the 2014 commercial troll fishery plans to allow unmarked coho retention on the WCVI once Interior Fraser River coho were considered to have moved through the area.

Preliminary coho catch estimates are outlined in table 44. Coho catch and release information from all fisheries can be found in Table 57.

Table 44. Preliminary coho catch estimates of the sport, First Nations (FSC, economic opportunity and ESSR), and commercial fisheries for Southern B.C. in 2014.

	Kept	Released
Sport	92,454	61,074
First Nations*	57,460	5,705
Commercial**	35,612	47,940
Total	**185,526**	**114,719**

*includes FSC, economic opportunity and ESSR fisheries.
**includes T'aaq-wiihak First Nations demonstration fishery harvest of 7,022 coho.

Tidal Sport

Tidal sport fisheries can be categorized as occurring in: mixed stock areas, where multiple stocks are found concurrently in the same fishing area, and in terminal areas where local single stocks dominate the catch. Areas where mixed stocks occur typically have more restrictive management measures in place designed to protect Interior Fraser coho stocks. In areas that are more terminal in nature, where the catch is typically single stock and abundance is available, opportunities are provided as appropriate. From 1998-2013, all Canadian sport, commercial and First Nations fisheries were managed to limit the exploitation rate on Interior Fraser coho stocks to 3%. In 2014 DFO approved a temporary increase in the exploitation rate, which provided the sport fishery additional opportunities to harvest wild coho. The table below outlines the areas in Southern B.C. and the general coho regulations pertaining to them.

Table 45. Southern B.C. coho fishery regulations in 2014.

Mixed stock fishing area	Daily Limit (marked or unmarked)	Size Limit	Coho Season
Johnstone Strait	2	30 cm.	June 27 – Dec 31
Georgia Strait	2, 1 may be wild	30 cm.	June 27 – Dec 31
Juan de Fuca Strait	2 marked	30 cm.	Jun 1 – Aug 31
Juan de Fuca Strait	2, 1 may be wild	30 cm.	Sept 1 – Dec 31
WCVI - Inshore	4	30 cm.	June 27 – Dec 31
WCVI - Offshore	2, 1 may be wild	30 cm.	June 27 – Aug 31
WCVI - Offshore	4, 1 may be wild	30 cm.	Sept 1 – Dec 31

* for specific management measures in specific areas refer to the information provided in the Fishery Notices.

The table below outlines coho catch and release information for sport coho fisheries in Southern B.C. The WCVI coho fisheries had a boundary in place distinguishing coho catch in the mixed-stock fishery (outside the coho boundary) and catch in the terminal area (inside the coho boundary). This coho boundary was put in place to protect Interior Fraser River wild coho which are found off WCVI during mid to late summer.

Table 46. Preliminary Sport coho kept catch and released estimates for Southern B.C. in 2014.

Area	Kept	Released
WCVI – Inshore (20W – 27)	20,089	5,944
WCVI – Offshore (21 – 127)	23,240	10,742
Strait of Georgia (14-19 May – Sep*)	14,925	10,643
Fraser River**	2,165	2,341
Juan de Fuca (19-20 Feb – Oct)	21,104	25,989
Johnstone Strait (11-12 Jun-Aug)	10,931	5,415
TOTALS	**92,454**	**61,074**

** Kept coho reported in the Lower Fraser are from fisheries in the Nicomen Slough and Chilliwack/Vedder Rivers.

Non-Tidal Sport

Northern Vancouver Island

Non-tidal openings for coho were available on:

- Cayeghle River (including the Colonial River) from April 1 to March 31 for one per day;
- Campbell/Quinsam River from October 1 to December 31 for four per day, two of which could be marked over 35 cm;
- Cluxewe River from April 1 to March 31 for two per day, hatchery marked only;
- Kokisilah River from April 1 to March 31 for one per day, maximum size limit of 35 cm;
- Nahwitti River from April 1 to March 31 for one per day; and
- Quatse River from June 15 to March 31 for two per day, hatchery marked only.

Anglers are restricted to the use of barbless hooks. The Campbell/Quinsam fishery was the only fishery of the above that was monitored by creel survey during 2014.

Strait of Georgia

During 2014 there were limited non-tidal openings throughout the Strait of Georgia:

- Qualicum River from October 23 to December 31 for four per day, two of which could be over 35 cm;
- Chemainus River from October 15 to March 31 for one per day, maximum size limit of 35 cm;
- Nanaimo River from October 15 to March 31 for one per day, maximum size limit of 35 cm; and
- Cowichan River from November 3 to December 31 for one per day, minimum size limit of 25 cm.

West Coast Vancouver Island

- San Juan River from October 25 to December 31, 2014 the daily limit was one, marked or unmarked. This fishery was not monitored by creel survey during 2014. The San Juan River is closed above its confluence with the Fleet River. A single barbless hook restriction is in effect all year and there is also a bait restriction in effect.

- Somass/Stamp River from August 25 to December 31, 2014 the daily limit was two, marked or unmarked. The Somass/Stamp Rivers were not monitored by creel survey during 2014. A single barbless hook restriction is in effect all year and there is a bait restriction in the Upper Somass and Stamp from June 1 to August 24.

- Nitinat River from August 25 to September 30 and October 15 to December 31, 2014 the daily limit for was two, marked or unmarked. The 2 week closure between October 1 and October 14 provides protection to chinook salmon during the peak spawning period. After the closure, the daily limit for salmon was four; anglers were allowed to retain two coho (marked or unmarked) and two chum salmon. The Nitinat River was not monitored by creel survey during 2014. The area above Parker Creek is closed to fishing. A single barbless hook restriction is in effect all year and there is also a bait restriction in effect.

- Conuma River from August 25 to December 31, 2014 the daily limit was four salmon of which two could be coho, marked or unmarked. The Conuma River was not monitored by creel survey during 2014.

- Washlawlis River and Waukwass River and other West Coast Rivers are open year-round with a daily limit of one coho, marked or unmarked. Barbless hooks are required. No creel survey information is collected. Other rivers receiving some directed effort for coho stocks are the Wakeman, Artlish, Zeballos, Tahsis, Burman, Ash, Taylor, Pacheena, Toquart and Leiner. The quota for all west coast streams unless identified above is zero.

Fraser River and Tributaries

During 2014, the retention of two hatchery marked coho per day was authorized in the lower Fraser River up to Sawmill Creek; however, due to the migration timing of Interior Fraser coho, the openings were scheduled to occur once the majority of this coho population was through the area. A description of the areas in the Fraser River which were open to the retention of hatchery marked coho:

- From the CPR Bridge at Mission, B.C. upstream to the Highway #1 Bridge at Hope - open from October 1 to December 31.

- From the Highway #1 bridge at Hope to Sawmill Creek - open from October 6 until December 31.

- There are no directed coho openings in the Fraser River or tributaries upstream of Sawmill Creek.

During 2014, there were limited non-tidal openings for hatchery marked coho on the following tributaries to the Fraser River:

- Alouette and Coquitlam Rivers from October 1 to December 31 for one per day.

- Kanaka Creek from November 1 to November 30 for one per day.

- Chilliwack River/Vedder and the Chehalis River for four per day from July 1 to December 31.

- Harrison River for four per day from September 1 to December 31.

- Nicomen Slough, Norrish Creek and the Stave River for four per day from January 1 to December 31 with only two over 35 cm.

During 2014, there were limited non-tidal openings for hatchery marked coho on the following systems which enter Boundary Bay:

- Little Campbell River and the Serpentine River one per day from October 1 to December 31.
- Nicomekl River one per day from September 1 to December 31.

First Nations

WCVI Economic Opportunity

In 2014 an agreement was reached with the Hupacasath and Tseshaht First Nations for an economic opportunity fishery targeting coho (Area 23). The TAC for this fishery was 3,000 pieces and there were two gill net fisheries in September for a total catch of 3,064 pieces.

WCVI FSC and Treaty Fisheries

There were limited FSC gill net and hook and line openings in September and October. The Maa-nulth domestic harvest was 1,979 pieces. The remainder of WCVI First Nation's reported catch was 4,610 coho. The combined harvest was 6,589 coho.

WCVI ESSR Fisheries

The Tseshaht and Hupacasath First Nations were issued a joint ESSR Licence for coho at the Robertson Creek Hatchery facility. The total catch was 16,695 coho.

The Ditidaht First Nation was issued an ESSR Licence for Nitinat Lake and the Nitinat Hatchery, but no harvest occurred.

The total catch WCVI for the ESSR fisheries was 16,695 coho.

Lower Fraser

Total FSC, EO and ESSR catch in 2014 for the Lower Fraser River was 23,472 coho; the majority of this was caught in ESSR fisheries (19,295).

B.C. Interior

There were no EO, Demonstration or ESSR fisheries in the B.C. Interior (Fraser River above Sawmill Creek) targeting coho in 2014; however, some coho by-catch was observed in BCI demonstration fisheries targeting other species. In total 182 coho were kept and 703 coho were released. Of the 182 coho observed as kept 145 were retained for FSC. FSC fisheries throughout the Fraser and Thompson watersheds were permitted to retain coho as by catch when fishing for sockeye and chinook salmon. The reported coho catch in the Thompson system and in the Fraser River and tributaries above the Thompson is not yet available. Some small directed FSC fisheries were permitted in the following terminal systems: Deadman River, Dunn Creek, Fennel Creek, Raft Creek, Lemieux Creek, Louis Creek, Eagle River and Salmon River. These fisheries were licenced to retain up to 780 coho however there has been very little catch reported to date.

Strait of Georgia FSC Fisheries

Data are still being compiled on various First Nations catches in the Strait of Georgia with the total preliminary catch estimated to be 9 coho caught in FSC fisheries.

Strait of Georgia ESSR Fisheries

There was an ESSR fishery targeting coho at the Big Qualicum hatchery; the total harvest, including FSC, was 5,326 coho. Harvest on the Cowichan River authorizing an ESSR for chum encountered and released 1,012 coho salmon.

Johnstone Strait

Data are still being compiled on various First Nations catches in the Johnstone Strait with the total preliminary catch estimated at 2,193 coho caught in FSC fisheries.

Commercial

In 2014, Southern B.C. commercial fisheries were regulated so that impacts on coho, in particular Interior Fraser coho stocks, were minimized. Retention of coho by-catch in most of these fisheries was not permitted, including the Fraser River, with the exception of a few terminal seine and gill net fisheries targeting chinook and sockeye where Interior Fraser River coho were not prevalent.
Area G troll AABM chinook fisheries were permitted to retain all coho by-catch from September 15 until December 31, 2014.

For the 2013/2014 (October 1, 2013 to September 30, 2014) AABM chinook fishing periods, the estimated total coho retained was 25,970 and releases during this period were estimated at 15,938 coho salmon.

WCVI T'aaq-wiihak First Nations Demonstration Fishery

As described in section 6.2, the T'aaq-wiihak First Nations participated in an AABM chinook fishery in 2014. A total of 7,022 coho were retained for sale during this fishery.

WCVI Terminal Area Coho

In 2014, commercial gill net and seine fisheries occurred in Alberni Inlet and Nootka Sound. Gill net fisheries occurred in Barkley Sound, and Nootka Sound. When targeting sockeye and hatchery chinook returns, harvesters were permitted to retain coho by-catch. In 2014, the total WCVI coho by-catch in commercial sockeye, and chinook net fisheries was 717 pieces retained and 30 released.

Stock Status

Upper Fraser

Field programs to estimate escapements are still underway, and only very preliminary results are available for some systems. Early returns to the Interior Fraser River indicate that escapement may be much lower than 2012 and 2013 returns, and are likely at or below levels observed in the 2011 parent brood escapements. Very preliminary data indicate returns to the entire Interior Fraser River may be below 20,000; however, preliminary estimates are not yet available for many systems, and near final estimates will not be available until early February, as most field studies are not yet completed.

Lower Fraser

The Lower Fraser Area (LFA) can be divided into four sub-areas: lower Fraser River, Howe Sound/Squamish River, Burrard Inlet and Boundary Bay.

Lower Fraser River

Escapement studies are currently underway, and many populations have not reached peak spawning at the time of writing. Preliminary escapement estimates for the surveyed systems should be available by late February 2015.

A hatchery coho indicator stock is provided by Inch Creek hatchery. Adult escapement is assessed annually and marine survival and exploitation rates are calculated; these estimates are not yet available. Adult coho visual surveys are conducted for a number of systems within the lower Fraser River as part of multi-species assessments; however, estimates are not yet available as the field programs will not be complete until late January or early February 2015.

Howe Sound/Squamish River

Assessments for Howe Sound and Squamish River are incomplete at this time. Staff at the DFO Tenderfoot hatchery will be taking brood stock until February 2015.

Burrard Inlet

An assessment of the returns to DFO Capilano hatchery is not yet complete. The 2014 abundance and status of this stock group is not known at this time.

Boundary Bay

Community-run SEP projects contribute significantly to coho returns to this area. The 2014 data will not be available until late February 2015.

Strait of Georgia

Coho salmon have been in a low productivity regime since the early 1990s. Marine survivals have been less than replacement levels for several years, but have been slowly increasing since the late 2000s. Updated estimates are not yet complete. Early results indicate a decrease in abundance.

Hatchery stocks

The preliminary 2014 coho escapement estimates of monitored hatcheries generally show a decrease in abundance over the previous year. Escapements to northern Strait of Georgia stocks (Puntledge, Qualicum, and Lang) are lower than the previous year but similar to the five year average. Generally escapements are higher than the low abundance period of 1995-2007. Escapements to southern Strait of Georgia stocks are not monitored outside of Goldstream River, where results will not be available until January. Early results indicate an escapement below the five year average.

Wild stocks

In the past, both Black Creek and Myrtle Creek have served as indicators of Strait of Georgia coho. In 2014, Myrtle Creek adult monitoring was not conducted.

Black Creek

The 2014 Black Creek adult project is on-going; escapement to date has been moderate with high water levels for most of the month of October and into the beginning of November. The majority of adult coho had moved past the fence by the last week of October with low levels of fish incoming until mid-November. The preliminary escapement mark-recapture estimate of 6,822 adults is a decrease from last year's estimate

(10,156), but shows a continuing trend of relatively strong returns to the system and a large improvement over the brood year in 2011. This adult return indicates favourable marine conditions in 2013 for Strait of Georgia coho salmon.

West Coast Vancouver Island

There are two indicator stocks in WCVI: Robertson Creek Hatchery and Carnation Creek. Both are located in DFO Statistical Area 23. In 2014, preliminary escapement to Robertson Creek Hatchery is estimated at about 35,000; higher than expected and above recent year averages. Escapement to the Carnation Creek indicator system is under review. Preliminary estimates of escapement to other WCVI systems suggest levels are also higher than recent year averages, but there is some variability in this observation.

Johnstone Strait and Mainland Inlets

The Keogh River plays an important role as the wild coho indicator stock for the upper Johnstone Strait area. Smolt production in 2013 was around 111,000, the highest production since the inception of the program in 1977 and well above the long term average of 63,000. Preliminary indications from the resulting adult escapement in 2014 are that marine survival continues to improve for this population. Smolt production from the Keogh in 2014 of approximately 67,000 is more in line with the average production and may result in an average to above average return in 2015 if marine conditions stay the same or improve.

The marine survival indicator for Area 13 is the Quinsam River Hatchery. Consistent with improved marine conditions, the Quinsam coho return was again strong, equivalent in size to 2013 in both adult and jack components with approximately 12,000 adults and 2,800 jacks returning.

Preliminary extensive escapement reports for coho in many systems are indicating moderate abundances in most of the systems, a decline from last year but closer to average. The building trend of the past few years looks to have slowed somewhat but is stable amongst the coho systems enumerated.

Johnstone Strait Chum

The Johnstone Strait chum fisheries primarily target chum that spawn in Johnstone Strait, Strait of Georgia, and Fraser River areas. In order to improve the management of Johnstone Strait chum fisheries and to ensure sufficient escapements, a 20% fixed exploitation rate strategy was implemented in 2002 in Johnstone Strait. Of the 20% exploitation rate, 15% is allocated to the commercial sector and the remaining 5% is set aside for test fisheries, First Nations FSC, sport harvesters, and to provide a buffer to commercial exploitation. Since the implementation of this management strategy, annual fisheries have been planned well in advance of the chum return.

The pre-season commercial fishing plan was developed based on expectation of effort, exploitation levels by gear group, and historical run timing (peak estimated as October 9). The fishing plan was developed to achieve the commercial allocation sharing guidelines of 77% for seine, 18% for gill net and 5% for troll. Adjustments to the fishing plan are made in-season, if warranted.

As outlined in Chapter 6 of the Pacific Salmon Treaty, commercial chum fisheries in Johnstone Strait are suspended when an abundance estimate of less than 1 million chum salmon migrating through Johnstone Strait is identified. This did not occur in 2014 and all fisheries proceeded as scheduled.

In 2014, the Area B (seine) and Area D (gill net) were competitive derby fisheries, and the Area H (troll) fleet was managed using an effort-based individual transferable effort (ITE) demonstration fishery.

Chum catch and release information from all fisheries can be found in Table 58.

First Nations

First Nations fisheries for chum were not restricted. The preliminary estimated catch by First Nations in the Johnstone Strait area is 113 chum salmon.

Marine Sport

The marine sport daily limits for chum are four with a possession limit of eight salmon. Peak participation in the sport chum fishery occurred on the Thanksgiving weekend on October 11 to 13, and during the annual Brown's Bay chum derby which took place on the weekend of October 18 and 19. The total catch during the derby was lower than previous years and estimated at just over 200 chum. The total sport catch in Johnstone Strait area was estimated to be approximately 600 chum this season; this is reported as part of the Strait of Georgia area. Since there was no creel survey in the month of October in this area, this estimate is based on anecdotal information from local fishermen and guides. The majority of the sport chum salmon fishing effort occurs in Area 13.

Non-Tidal Sport

There is anecdotal information of limited sport chum fisheries in non-tidal waters in the Johnstone Strait area. Overall effort and catch is not estimated but expected to be minimal.

Commercial

The commercial chum fisheries in Johnstone Strait were planned for September 29 to November 2, 2014. The total commercial chum catch from Johnstone Strait during chum directed fisheries is estimated at 287,494 pieces. An additional 31,490 pieces of chum were harvested during commercial sockeye directed fisheries in Johnstone Strait.
Area and gear restrictions, including the mandatory use of revival tanks, were in place for commercial chum fisheries. Catch monitoring included requirements for catch reporting and mandatory logbooks.

A description of each fishery is provided below:

Area B Seine

In 2014, there were two commercial seine openings for chum salmon in portions of Areas 12 and 13. The first opening took place on October 6 for twelve hours. The second opening took place October 20 for ten hours. The second opening was originally scheduled for only October 20, but was extended by five hours because of lower than expected effort in both openings.

The chum catches for the first and second openings were estimated at 54,307 pieces and 163,600 pieces respectively; for a total catch of 217,907 chum.

Area D Gill net

In 2014, there were three commercial gill net openings for chum salmon in portions of Areas 12 and 13. The first opening was for 41 hours and took place from 16:00 hours on October 2 to 09:00 hours on October 4, the second opening was for 65 hours and took place from 16:00 hours on October 13 to 09:00 hours on October 16, and the third opening was for 41 hours and took place from 16:00 hours on October 25 to 09:00 hours on October 27.

Pre-season, each Area D gill net opening was planned for 41 hours in duration but was subject to change based on in-season assessment information, weather constraints, and effort information. The Area D gill net fishery planned for October 13 to 15 continued as per the pre-season plan but was extended an additional

24 hours to October 16, based on lower than expected effort in the first and second openings. The third opening was planned pre-season to occur from October 26 to 28, but was moved in-season one day sooner to avoid poor weather conditions forecasted for late in the day on October 27.

The estimated chum catches for the three Area D gill net fisheries were 8,799 pieces, 42,457 pieces and 16,900 pieces respectively; for a total estimated catch of 68,156 chum.

Area H Troll

In 2014, the Area H troll ITE demonstration fishery was divided into two fishing periods: September 29 to October 12 (period 1) and October 14 to November 2 (period 2); with a one day closure between the two periods on October 13, and closures during the Area B seine fisheries on October 6 and 20. Each licence was initially allocated three boat days during the first fishing period and two boat days during the second fishing period. Boat days could be transferred between vessels within each fishing period, but could not be transferred between fishing periods. Due to very low effort during the first period, each licence eligibility holder was allocated three fishing days in period 2.

The catch for the first fishing period was 763 chum, and 668 chum for the second fishing period, with a total catch of 1,431 chum. Total effort for the Johnstone Strait fishery was 35 boat days; 23 in period 1 and 12 in period 2.

Table 47. Johnstone Strait Commercial Catch and By Date and Gear Type

Gear Type	Fishery Dates	Effort[a]	Catch
B – Seine	Oct 6	55	54,307
	Oct20/21	67	163,600
D - Gill net	Oct 2-Oct 4	90	8,799
	Oct 13-Oct 16	112	42,457
	Oct 25-Oct 27	90	16,900
H – Troll	Sep 29-Oct 12	23	763
	Oct 14-Nov 2	12	668

[a] Number of vessels for seine and gill net, and boat days for troll.

Table 48. Johnstone Strait Fisheries Catch and Allocation

Gear Type	Total Catch	% of catch	J.S. Allocation Plan
Area B	217,907	75.8%	77%
Area D	68,156	23.7%	18%
Area H	1,431	0.5%	5%
Total Catch:	**287,494**		

Stock Status

Mixed Stocks

The main components of the Inside South Coast (ISC) chum return were expected to be both Fraser and non-Fraser stocks. These stocks are typically dominated by four year old fish which were from a well below average 2010 brood return that out-migrated to the ocean in 2011. It was quite apparent that other salmon species that also out-migrated in 2011 encountered improved survival conditions (i.e. pink and coho returns in 2012). The pre-season expectation for ISC chum suggested low to near target returns to the area.

The Johnstone Strait test fishery provided timing and abundance information for the 2014 return, which is important in assessing the performance of the 20% fixed exploitation rate strategy. It also provided an index of abundance, used to determine the likelihood of the number of returning chum being over the 1.0 million critical level (requirement for commercial openings). Catch per unit effort in the test fishery was

higher than what was encountered in 2010 and it was determined that the ISC index of abundance was likely above the 1.0 million critical level. Age composition derived from the test-fishery and commercial samples was dominated by 4 year olds throughout the season.

Preliminary information on escapements and catches to date suggest returns were average to below average in most Inner South Coast chum populations. In-season information is still being collected and analyzed regarding total stock size.

Terminal returns

Preliminary information on the status of summer run chum in the Johnstone Strait area indicated varied returns. Assessments of terminal fall chum, such as the Nimpkish, have been hampered with high river flows during of October and little information is available at this time on the status of those stocks.

Fraser River Chum

Chum salmon return to the Fraser River from September through December, with the typical peak of migration through the lower river occurring from mid to late-October. Spawning locations are predominately located in the Fraser Valley downstream of Hope, B.C., with major spawning aggregations occurring within the Harrison River (including Weaver Creek and Chehalis River), the Stave River, and the Chilliwack River. No spawning locations have been identified upstream of Hells Gate.

The escapement objective for Fraser River chum is 800,000. Since 2001, this objective has been achieved in all but two years. Escapements in 2009 and 2010 did not meet the escapement goal, with approximately 460,000 and 550,000 returning to spawn in those years, respectively.

General Overview of Fisheries

Fraser River chum are typically harvested in Johnstone Strait, the Strait of Georgia, U.S. waters of Area 7 and 7A, and in the Fraser River.

Within the Fraser River, chum directed fisheries include: First Nations FSC fisheries; sport fisheries; and commercial fisheries. In recent years, significant conservation measures have been implemented in-river during the Fraser River chum migration period, in order to protect co-migrating stocks of concern (including Interior Fraser coho and Interior Fraser steelhead). Depending on the fishery, these measures have included both time and area closures, as well as gear restrictions. These conservation measures have restricted Fraser River commercial chum fishing opportunities in recent years.

Catch data from all chum fisheries can be found in Table 58.

<u>First Nations</u>

FSC gill net fisheries commenced October 5 (below Mission) and October 11 (above Mission), following closures to protect co-migrating Interior Fraser coho. The estimated catch from all fisheries (includes FSC, Economic Opportunity, Demonstration, Treaty, and ESSR) below Sawmill Creek was 158,341. There were 39,234 chum harvested in FSC fisheries, 98,576 harvested in Economic Opportunity and Demonstration fisheries, and as of November 20 there have been 18,881 chum reported harvested through ESSR fisheries. ESSR harvests are ongoing for 2014.

Sport

In 2014, some of the major Fraser River watershed sport salmon fisheries impacting chum salmon were assessed, including significant salmon fisheries occurring in the lower Fraser River mainstem and the Chilliwack River (a tributary to the Fraser River in the lower Fraser Valley).

The lower Fraser River mainstem sport fishery was open to the retention of chum salmon from July 16 to December 31 (with a daily limit of two). In 2014, this mainstem fishery was assessed from July 16 to October 5. Similar to 2013, this assessment was truncated in October (from 2007 through 2012, this sport fishery was assessed to October 15 in all years, and November 30 in 2007 and 2012). Preliminary estimates of kept and released chum salmon are 344 and 358, respectively. The Chilliwack River sport fishery was open to the retention of chum salmon from July 1 to December 31 (with a daily limit of one). This Chilliwack River fishery was assessed from September 15 to November 15 in 2014. Preliminary estimates to October 15 of kept and released chum salmon are 1,120 and 3,153 respectively.

The Harrison River, Stave River and Nicomen Slough sport fisheries were open to the retention of chum salmon year round (daily limit of two). In 2014, no assessment was conducted on the Harrison River or Stave River fisheries; however, the Nicomen Slough fishery was assessed from October 11 to November 30. Preliminary estimates to October 28 of kept and released chum salmon are 15 and 51, respectively.

Commercial

The Fraser River chum test fishery at Albion operated every other day from September 1 until October 19, alternating days with the Albion chinook test fishery. From October 21 until November 9, the chum net fished every day, and then every other day from November 11 until November 23. In 2014, the total number of chum harvested during the Albion chum test fishery was 7,856, and an additional 3,912 pieces were harvested during the Albion chinook test fishery.

Commercial fisheries in the lower Fraser River (below Mission) remained closed during the Interior Fraser River coho window closure, and further closures were in place until later in October to meet the Interior Fraser steelhead management objectives. Two Area E Gill Net commercial openings took place in the Fraser River (Area 29) during the 2014 chum season, consisting of an eight hour fishery on October 23 and a 10 hour fishery on October 28, for a total estimated harvest of 62,143 chum salmon retained and 25 chum released. Area B seine was also provided a limited opportunity in Area 29 that took place on October 29 for a total estimated harvest of 25 chum retained and 4 chum released.

An estimated 1,645 chum were retained as by-catch during Area E fisheries for Fraser River sockeye; Area B seines retained 292 chum as by-catch during Fraser River sockeye fisheries in Area 29.

Stock Status

The number of adult chum returning to the Fraser River each fall is estimated in-season with a Bayesian model based on Albion test fishing catch. In 2014, the catch of chum at Albion that feeds into this model was much lower than recent years throughout September, but picked up significantly by the second week of October.

For fishery planning purposes, DFO provided a provisional in-season update on October 14 of 1.011 million chum. This estimate assumed that the peak date of the run was no later than October 14.

A subsequent estimate of Fraser River chum abundance was provided on October 19. The estimated return on that date was 1.329 million (80% probability interval of 0.789 to 2.019 million), with a 50% migration date through the lower river of October 16. This peak date is slightly earlier than that observed in recent years (average peak date from 1997-2012 is October 18).

Additional in-season estimates were not provided, as subsequent test fishing information was consistent with a run size of 1.329 million.

Fraser River chum salmon return to numerous spawning locations in the lower Fraser River and its tributaries. Spawning escapement for Fraser River chum salmon is currently assessed annually for four of the six largest chum producing systems, as well as for a number of smaller tributaries. The largest observed escapement of Fraser River chum (greater than 3 million fish), was seen in 1998. Since that time, spawning escapements for annually assessed Fraser River chum systems trended downwards, to 2009 and 2010 when chum salmon escapements estimates fell below the established 800,000 escapement goal. However, escapements improved in 2011, 2012 and 2013 and exceeded the escapement goal, with estimated spawners of 1.1, 1.4 and 1.0 million, respectively.

Current year escapement assessment programs are still ongoing, and preliminary estimates of escapement are not available. However, observations of spawners to date seem consistent with 2014 Albion-based in-season assessment and lower Fraser River harvest estimates to-date.

Strait of Georgia Chum

Strait of Georgia chum fisheries consist of terminal opportunities for chum returning to their natal spawning streams. Many of the potential terminal fishing areas have enhancement facilities and/or spawning channels associated with the rivers. Terminal fishery strategies consist of monitoring and assessing stocks (escapement and returning abundance), with the objective of ensuring adequate escapement and providing harvest opportunities where possible. Stock assessments may include test fisheries, escapement enumeration and over flights. In some areas where stocks receive considerable enhancement or where stocks have above average productivity, limited fishing may occur prior to major escapement occurring.

A productivity analysis was conducted in 2014 in order to review escapement targets in the major chum systems of the Strait of Georgia. The results of this analysis have led to new interim escapement targets in Big Qualicum, Little Qualicum and Nanaimo Rivers.

Commercial

Area 14

Chum returning to this area have been enhanced since the late 1960s and terminal fisheries have occurred in October and November since the 1970s. The returning Area 14 chum abundance is forecasted pre-season using brood escapement, average survival and age composition. In-season run strength is assessed from any early catches, visual observations at river estuaries and by escapement counts to the three major river systems.

This fishery is directed at the enhanced stocks of three systems: Puntledge, Qualicum and Little Qualicum rivers. The Qualicum River is often referred to as the 'Big' Qualicum River, to better distinguish it from the Little Qualicum River. The interim escapement goals for the three river systems are 60,000 for Puntledge River, 85,000 for Little Qualicum River, and 85,000 for Qualicum River, adding up to an overall interim escapement goal of 230,000 chum, not including enhancement facility requirements (about 10,000 chum, bringing the total escapement goal to 240,000). Escapement goals on the Qualicum and Little Qualicum rivers were reduced in 2014 from 130,000 and 100,000 respectively, as a result of the productivity analysis conducted for chum systems in the Strait of Georgia.

The Area 14 fishery has a specific harvest strategy, implemented since 1981. The strategy consists of limited early harvest prior to escapement occurring. The allowable early chum harvest is calculated from 65% of the predicted surplus (terminal return run size minus escapement of 240,000 and buffer of 100,000).

The buffer safeguards against errors in forecast stock abundance. The surplus within the 100,000 buffer and remaining 35% of the surplus may be harvested provided that escapement targets have been achieved. If there is no significant surplus identified in the pre-season forecast, potential fishing opportunities are determined in-season based on pre-set in-river escapement targets and run timing information.

In 2014, forecasts were below the escapement targets for all Area 14 systems. No commercial fisheries occurred in Area 14 and escapement assessment continues, but indications are that all systems will see chum returns well below escapement targets.

Area 16

This fishery targets wild chum stocks returning to river systems in the Jervis Inlet area. The main systems are Tzoonie, Deserted and Skwawka rivers. The overall escapement goal for Jervis Inlet streams is 110,000. These terminal fisheries occur when the individual or combined escapement goals have been assured. Fishing opportunities do not occur on a regular basis. There were no fisheries in Area 16 in 2014.

Area 17

This fishery is a terminal fishery targeting Nanaimo River stocks. The Nanaimo River chum stocks are supplemented by the Nanaimo River hatchery (supplementation is on a sliding scale), where increased enhancement occurs during poor escapement years. Escapements fluctuate annually and fishery openings are planned in-season based on escapement estimates. The overall interim escapement goal for the Nanaimo River is 40,000.

Nanaimo River assessments include swims by Nanaimo River Hatchery staff, a sonar counting system (DIDSON) and spot counts or helicopter counts by DFO during the peak of the return when possible. The DIDSON was installed and operational on October 7. The Preliminary escapement estimate based on DIDSON data is approximately 58,000, although these data are very preliminary and require further review.

In 2014 there were no commercial fisheries for Area E gill net or Area B seine.

Area 18

This fishery is directed primarily at Cowichan River stocks; however, Goldstream chum are also harvested. Fishery openings in mid to late November are limited to Satellite Channel, in order to minimize impacts on Goldstream stocks. Chemainus River stocks could also be impacted if the fisheries are earlier in November, but likely to a lesser extent.

Fishery openings are planned in-season based on escapement estimates from a DIDSON counter and information from a test fishery. Management is also guided by advice from the Cowichan Fisheries Roundtable and the Mid Vancouver Island (MVI) Chum Subcommittee, and an in-season Chum Escapement Forecast Tool based on the DIDSON count and date. The overall escapement goal for the Cowichan River is currently 160,000 chum counted by the DIDSON counter.

The DIDSON was installed on October 14 and was moved to bulkhead on the edge of the river on October 22 due to increased flows and large debris in the river. The preliminary escapement estimate is 220,000 chum.

A weekly conference call was held with the Cowichan Fisheries Roundtable Harvest Committee to discuss stock status and potential fishing opportunities. In 2014, an Area E commercial gill net fishery was triggered when the DIDSON chum count was at approximately 115,000 chum and the in-season forecast for early timing was 180,000 chum. Area E commercial gill net fisheries occurred on November 5 and 6,

and from November 11 to 17. Preliminary catch estimates for the 2014 Area 18 gill net fishery are approximately 28,455 chum.

Area 19

This fishery is directed primarily at Goldstream River stocks, although some Cowichan River chum salmon are also harvested. Fishery openings set for mid to late November are limited to the portion of Saanich Inlet (Sub area 19-8) which is outside or to the north of Squally Reach. This area restriction is implemented to minimize impact on Goldstream chinook and coho stocks.

Fisheries are planned in-season based on escapement estimates and a test fishery. Area 19 falls under the same management regime as Area 18. The overall escapement goal for the Goldstream River is 15,000. Weekly stream walks are conducted on Goldstream River by Goldstream Hatchery staff to estimate chum escapement. In 2014, enumerations began on October 22. The preliminary escapement estimate is 29,000.

Chum catch and release information from all fisheries can be found in Table 58.

First Nations

Food, Social and Ceremonial Fisheries

The preliminary estimated FSC catch by First Nations in the Strait of Georgia is estimated to be approximately 387 chum; additional catch data is currently being compiled.

ESSR Fisheries

Chum ESSR fisheries did not occur in 2014 in Area 14, where significant fisheries have occurred in previous years. A chum ESSR fishery occurred in Area 18 (Cowichan River), which harvested a total of 9,648 pieces.

Sport

The majority of sport effort directed at chum salmon occurs in the lower portions of the Discovery Passage area, particularly in the waters around Campbell River. These catch estimates are reported in the Johnstone Strait chum section above. Some marine chum fisheries take place in the approach waters of the Puntledge and Qualicum Rivers, but the catch and effort are both very low and not currently surveyed.
Tidal sport fisheries are subject to the normal salmon daily and possession limits (daily limit of four per day and possession of eight), and are open throughout the area. In all areas, anglers were restricted to the use of barbless hooks and there was a minimum size limit of 30 cm. Occasionally sport in-river fisheries occur where surpluses or target escapements will be met. These fisheries occur almost exclusively where enhancement facilities are present. Details on chum opportunities are reported in the Tidal Waters Sport Fishing Guide and also in the Freshwater Supplement. In-season changes and opportunities are also posted online at the Pacific Region sport fisheries website: http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm.

Commercial

Strait of Georgia commercial chum fisheries for gill net were conducted in Area 18 between November 5 and November 17. The total commercial chum catch from the Strait of Georgia is estimated at 28,455 pieces (see Table 49 below). A description of each fishery is provided in the following table.

Chum catch and release information from all fisheries can be found in Table 58.

Table 49. Strait of Georgia Commercial Chum Catch by Date and Gear Type

Fishery Date	Gear type	Area	Effort (boat days)	Catch
Nov 5–6	GN	18	120*	15,000*
Nov 11–17	GN	18	230*	15,000*

* *Preliminary*

Stock Status

Historically, chum returns have been highly variable relative to brood year escapements. For 2014, the forecast for Jervis Inlet and Nanaimo River chum abundance were for below the target level, the Mid-Island systems were forecast to be around the target level, and the Cowichan and Goldstream chum abundance were forecast to be above the target level.

Conditions for returning chum migration and spawning were poor at the beginning of the migration period in October, but by mid-October water levels had increased so that migration was unimpeded. Spawning escapements continue to be monitored and are currently being compiled. To date, returns for the Jervis Inlet systems have been within the expected range, the Mid-Island system have been well below the expected range, and the Nanaimo, Cowichan and Goldstream chum abundances have been near the top of the expected range (Table 50).

In Areas 18 and 19, a seine vessel was deployed over three days (October 29, November 3 to 4) to conduct test fishing sets. Over the three test days, 16 sets were made (eight assessment and eight non-assessment sets), with total catch of 1,432 chum and 16 coho. The largest test catches were located in Sansum Narrows. A total of 1,387 chum were retained to cover the cost of the test fishery and the remainder were released.

Table 50. Strait of Georgia Chum Preliminary Spawning Escapements

	Target Escapement Target	2014 forecast Expected range	Preliminary 2014 Escapement
Jervis Inlet	110K	19K – 29K	24K
Mid-Island	240K	250K – 376K	71K
Puntledge	*60K*		*30K*
Little Qualicum	*85K (interim)*		*10K*
Big Qualicum	*85K (interim)*		*31K*
Nanaimo	40K	41K – 61K	58K
Cowichan	160K	164K – 246K	220K
Goldstream	15K	19K – 29K	29K

West Coast Vancouver Island Chum

Commercial chum salmon fisheries normally occur on the WCVI from late September to early November in years of chum abundance. The majority of chum fishing on WCVI takes place adjacent to Nitinat Lake (Area 21), in Nootka Sound and Tlupana and Esperanza Inlets (Area 25). During the past few years there have been limited-fleet gill net fisheries in Barkley Sound (Area 23), Clayoquot Sound (Area 24), Nootka Sound and Esperanza Inlet (Area 25). Commercial fisheries target wild chum stocks returning to local streams and enhanced chum stocks from Nitinat and Conuma hatcheries.

With the exception of Nitinat and Tlupana Inlet where hatchery stocks dominate adult returns, WCVI chum fisheries are managed to between 10% and 20% harvest rate. Fishery managers consider run timing, fishing effort and fleet distribution when implementing in-season management measures. In-season management measures, such as limiting fishing effort to one or two days per week, are implemented to ensure that target harvest rate objectives are not exceeded. As well, in 2012, revised fishery lower and target reference points (LRPs and TRPs) were developed based on the Sustainable Escapement Goal (SEG) method. The SEG approach uses the long-term escapement series to set fishery reference points. Conservative "SEGs" are defined as the 25% and 75% of a long-term escapement time series. The lower SEG is estimated to

represent approximately 0.8 S_{MSY}. Although the WCVI chum forecast is highly uncertain, the forecast is used to inform pre-season fishery planning. Where the forecast is below the LRP for an area, fisheries are curtailed. Where the forecast is below the TRP, fisheries are more limited.

Table 51. Southwest Vancouver Island Chum Conservation Unit Pre-season Forecast for 2014 in relation to fishery reference points.

Area/Stock	PFMA	2014 Forecast	Lower Reference Point* (LRP)	Target Reference Point** (TRP)	Potential Harvest
Nitinat Hatchery/Lake	21/22	120,000	225,000	325,000	-
Barkley	23	55,000	45,000	150,000	6,875
Clayoquot	24	75,000	20,000	70,000	9,375
Conuma (Tlupana Inlet)	25	20,000	-	-	-
Nootka	25	10,000	15,000	55,000	-
Esperanza	25	27,000	15,000	55,000	2,700
Kyuquot	26	51,000	20,000	75,000	6,375

* Interim LRP's are equivalent to the 25% of the long term average escapement. LRP's represent the escapement level below which fisheries should not be conducted.
** Interim TRP's are equivalent to 75% of the long term average escapement. TRP's represent the target escapement for each area.

For 2014, the pre-season forecast was to all WCVI areas either below or slightly above the provisional target limit reference point for fisheries. In areas where there was a surplus identified, the potential surplus only covered local First Nations FSC needs.

Escapement to Nootka Sound streams has been at or below both the target escapement and the limit reference point since 2006, and there is concern for the sustainability of these stocks. In addition, Conuma Hatchery has been unable to reach their broodstock target in recent years. As 2014 forecast returns were below both the target escapement and the limit reference point, commercial fisheries were not conducted in Outer Nootka in 2014.

Esperanza stocks have been at or below the LRP for four of the last five years, and the 2014 forecast was for the return to be just above the target escapement and the limit reference point. The limited TAC identified for harvest would meet the local First Nations food social and ceremonial needs, so no commercial fisheries were conducted in 2014.

First Nations FSC and Treaty Domestic Allocation fisheries for chum salmon occur primarily in terminal areas. ESSR fisheries were conducted by the Ditidaht First Nation at Nitinat Lake, targeting Nitinat hatchery surplus production. Economic Opportunity fisheries were carried out by the Hupacasath and Tseshaht First Nations in upper Alberni Inlet and in the lower Somass River.

In-river sport fisheries generally have low effort, but recently effort has increased in some terminal area rivers (i.e. Nitinat River). The directed effort and catch of chum in sport marine fisheries off the WCVI remains very low.

Chum catch and release information from all fisheries can be found in Table 58.

First Nations

The Ditidaht First Nation chum FSC fishery occurs in the terminal area. In addition, they have access to ESSR fisheries in Nitinat Lake and at the Nitinat hatchery in years of higher chum abundance.

Tseshaht and Hupacasath First Nations conducted chum catch monitoring and chum adult enumeration surveys in Alberni Inlet local river systems in 2014. Observations were reported weekly to DFO Stock Assessment and Resource Management staff.

WCVI FSC and Economic Opportunity Fisheries

In 2014, an agreement was reached with the Hupacasath and Tseshaht First Nations (Somass First Nations) for an economic opportunity fishery targeting chum (Area 23). The preseason forecast was 55,000 and this identified a potential harvest of 6,875 chum. The preseason planned FSC harvest for Maa-nulth and Somass First Nations combined was approximately 6,000 chum, which precluded planning for any commercial or economic opportunity fisheries.

Somass First Nations FSC catch was 113 chum. Maa-nulth domestic harvest was reported as 138 chum. The remaining WCVI NTC First Nations harvest was 899 chum. The total combined catch for the WCVI First Nations was 1,150 chum.

ESSR Fisheries

The Ditidaht First Nation was issued an ESSR Licence for chum at Nitinat Lake and Nitinat hatchery. The catch was 7,082 in the lake and 28,270 from brood capture. The total catch for these fisheries was 35,352 chum.

Sport

The WCVI sport fishery is open year-round with a limit of four per day. Anglers are restricted to the use of barbless hooks and there is a minimum size limit of 30 cm. In both offshore and inshore areas of WCVI, sport catch of chum is very low (estimated at less than 200 combined).

There was also a chum fishery in the Nitinat River which was open from October 15 until December 31. The daily limit was two chum per day and anglers were restricted to the use of barbless hooks. This fishery was not monitored by creel survey in 2014.

Commercial

Nitinat

In previous years the Nitinat commercial chum fishery was the largest on the West Coast of Vancouver Island; this fishery targets returning Nitinat River hatchery stocks. The fishing period is generally October 1 to November 15. In 2014, no test fishing program was conducted and a fixed effort approach was developed to target a harvest rate of approximately 25%.

The pre-season forecast was 120,000, which was below the lower reference point of 225,000 and resulted in no commercial fisheries for 2014. The preliminary return in 2014 is estimated at 150,000 chum, which remains below the Lower Reference Point at which commercial fisheries can be conducted.

Area B Seine

No fisheries.

Area E Gill net

No fisheries.

Limited Entry Chum WCVI

For most WCVI areas, forecasts for 2014 were for improved abundance relative to the very low observed returns in 2013. However, in most areas the forecast abundance remains below or only modestly above lower fishery reference points (Table 2). For those areas with forecasts above the fishery reference point, the available surplus is allocated to First Nation domestic use in communal licenses.

Barkley (Area 23), Clayoquot (Area 24) and Nootka/Esperanza (Area 25)

Commercial chum fisheries in Areas 23, 24 and 25 are typically managed using weekly in-season effort estimates. The harvest-rate approach is designed to achieve a harvest rate of 20% or less on all stocks in Nootka Sound and 10% to 15% in Esperanza Inlet, Clayoquot Sound and Barkley Sound chum stocks. In Tlupana Inlet, where hatchery stocks predominate, exploitation rates may be higher in years of higher abundance.

The main objective of the gill net fishery strategy is to provide advance indication of chum salmon abundance that could initiate larger fleet fisheries in Nootka Sound and Tlupana Inlet

Barkley Sound (Area 23)

There were no commercial chum fisheries in Areas 23 this year. The preseason forecast was 55,000 and had a potential harvest of 6,875 pieces. The pre-season planned FSC harvests for Maa-nulth and Somass First nations were approximately 6,000 pieces which nearly matched the forecasted harvestable surplus precluding any commercial fisheries.

Clayoquot Sound

There were no commercial chum fisheries in Area 24 this year. The chum pre-season forecast for Clayoquot Sound was 75,000 pieces with a potential harvest of 9,375 pieces. The pre-season planned First Nations FSC harvest in Area 24 was 12,100 pieces. This left no fish available for commercial harvest.

Nootka

There were no commercial chum fisheries in Area 25 Nootka this year. This was due to the fact that the preseason forecast was below Lower Reference Point. Conuma Hatchery was unable to achieve brood stock targets in recent years due to low escapements. In addition, all other Nootka Sound systems regularly surveyed for escapement trends (Canton, Sucwoa, Tlupana and Burman) have had escapements at or below the LRP for the last seven years.

Esperanza

There were no chum fisheries in Area 25 Nootka this year. This was due to the fact that the preseason forecast was below Lower Reference Point.

Kyuquot

There were no commercial chum fisheries in Areas 26 this year. The preseason forecast was 50,000 with a potential harvest of 6,250 pieces. The combined treaty entitlements for Maa-nulth First Nations were approximately 6,000 pieces which precluded any commercial fisheries.

Stock Status

For WCVI chum the current stock status is considered poor. Over the last three brood cycles, naturally spawning populations have been below target abundance in many years despite the precautionary harvest regime. In addition, hatchery production levels have declined in recent years partially as a result of low abundance (i.e. hatcheries have not been able to achieve brood-stock targets in some years.) Therefore, in recent years overall catches have declined relative to historic levels.

Table 52. Catches in Canadian Treaty Limit Fisheries, 1996 to 2014 (Preliminary)

Fisheries/Stocks	*Species*	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*	*2004*	*2003*	*2002*	*2001*	*2000*	*1999*	*1998*	*1997*	*1996*
Stikine River (all gears)	Sockeye Coho Chinook-lg Chinook-jk	42,800 4,992 3,308 759	30,146 4,835 3,415 1,594	30,352 5,748 4,573 1,213	55,623 4,703 2,307 1,165	50,543 4,952 1,766 1,001	48,049 5,061 2,330 714	33,614 2,398 7,860 1,067	59,237 47 10,576 1,735	101,209 72 15,776 2,078	85,890 276 18,997 2,177	84,866 275 3,857 2,574	58,784 190 1,396 1,052	17,294 82 1,362 578	25,600 233 1,480 103	27,468 301 3,086 628	38,055 181 2,916 1,264	43,803 726 2,164 423	65,559 401 4,483 286	74,281 1,404 2,471 421
Taku River (commercial gill net)	Sockeye Coho Chinook-lg Chinook-jk	17,872 14,568 2,472 657	21,163 10,374 738 N/A	30,209 8,689 1,909 478	24,012 6,102 2,333 514	20,211 10,349 4,658 697	11,057 5,649 7,031 1,183	19,445 4,866 1,184 330	16,564 5,399 862 337	21,093 9,180 7,312 198	21,932 6,860 7,534 821	19,860 5,954 2,074 334	32,730 3,168 1,894 547	31,053 3,082 1,561 291	47,060 2,568 1,458 118	28,009 4,395 1,576 87	20,681 4,416 908 257	19,038 5,090 1,107 227	24,003 2,594 2,731 84	41,665 5,028 3,331 144
Alsek River (all gear)	Sockeye Coho Chinook	1,140 0 39	508 29 73	1,786 N/A 85	2,110 29 214	1,716 7 294	717 3 125	0 34 7	1,340 1 41	1,327 0 19	594 71 114	2,122 127 185	2,795 192 228	2,255 289 2,194	1,177 99 277	745 52 142	554 28 412	585 112 346	520 5 530	1,361 65 1,098
Areas 3 (1-4)* (commercial net)****	Pink	450,671	1,249,570	118,164	160,757	30,686	404,460	8,330	1,740,270	228,378	878,552	402,459	667,103	876,631	173,318	127,000	2,162,280	61,000	329,000	987,000
Area 1 (commercial troll)****	Pink	31,775	84,216	57,013	52,221	19,948	60,402	29,295	61,276	34,854	39,430	27,751	98,347	41,418	175,000	28,295	25,000	0	261,000	732,000
North Coast** (troll + sport)	Chinook	221,001 172,001+ 49,000	115,914 69,264+ 46,650	120,305 80,256+ 40,050	122,660 74,660+ 48,000	136,613 90,213+ 46,400	109,470 75,470+ 34,000	95,647 52,147+ 43,500	144,235 83,235 + 61,000	215,985 151,485 + 64,500	243,606 174,806 + 68,800	241,508 167,508 + 74,000	191,657 137,357 + 54,300	150,137 103,037 + 47,100	43,500	32,048	70,701	144,650	145,568	269,900
West Coast Vancouver Island (troll + sport + FN)	Chinook	178,558 127,177+ 48,365+ 3,655	108,710 43,043+ 61,712+ 3,955	130,719 62,573+ 61,822+ 4,300	206,569 123,930+ 78,350+ 4,289	137,660 79,123+ 52,698+ 5,839	125,488 53,191+ 68,775+ 3,381	143,817 89,704 + 50,319+ 3794	139,150 87,921 + 46,229 + 5,000	145,970 103,978 + 36,992 + 5,000	195,791 143,614 + 52,177	210,875 168,837+ 42,038	179,706 152,677 + 27,029	165,824 134,308+ 31,516	102,266 78,302+ 23,964	89,139 64,216+ 24,923	28,540 6,906+ 21,634	10,855 6,678+ 4,177	59,796 53,396+ 6,400	36,77 4+ 3,673
Fraser River Canadian Commercial Catch	Sockeye Pink	7,945,474 0	2,124 2,855,441	0 0	443,000 4,751,800	9,305,104 0	0 1,442,840	16,942 0	0 333,300	4,633,623 68,325	137,000 338,000	1,993,800 0	1,042,986 1,149,189	2,182,700 0	295,000 579,000	953,000 0	54,000 3,000	1,295,000 0	8,737,000 3,660,000	1,019,000 0
Fraser River U.S. Commercial Catch	Sockeye Pink	691,000 0	4,609 3,057,222	105,100 0	260,000 2,893,400	1,970,000 0	0 2,726,230	49,800 0	3,900 377,600	701,300 0	0 0	192,200 0	244,000 773,000	434,600 0	240,000 427,000	894,000	41,000 3,000	707,000 0	1,578,000 1,565,000	257,000 0
West Coast Vancouver Island (commercial troll)	Coho	32,992	5,499	1,988	0	458	0	369	1,424	2,399	5,989	0	0	0	0	0	0	0	0	761,000
Johnstone Strait (commercial catch)***	Chum	318,984	597,003	391,324	751,560	62,510	510,708	298,931	494,944	800,363	787,226	1,089,100	1,026,029	700,000	230,000	161,000	41,411	1,820,000	104,593	101,971

*AREA 3 H CATCHES INCLUDED PRIOR TO 1995 AND EXCLUDED FROM 1995-1998 INCLUSIVE. NOT PART OF 1999 ANNEX IV PROVISIONS

** NORTH COAST CATCH EXCLUDES TERMINAL EXCLUSION CATCHES OF 6,000 (93), 6,100 (93), 7,400 (95), 6,400 (96), 1,702 (97), 16,000 (98), 5,949 (99), and 2,187 in 1996. BC TERMINAL EXCLUSION IN THE 1999 AGREEMENT - COVERED UNDER THE AABM ARRANGEMENT. CENTRAL COAST AREAS NOT PART OF 1999 ANNEX IV PROVISIONS.

*** CANADIAN CATCH INCLUDES COMMERCIAL, FSC AND TEST FISH CATCHES IN AREAS 11-13 FOR 1991-94 INCLUSIVE, AND IN AREAS 12-13 FOR 1995 TO 2006 INCLUSIVE. 2007-PRESENT, CATCHES FROM FISHERIES MANAGED TO FULL HARVEST RATE OF 20%.

****ALL PINK CATCHES FOR ALL YEARS (1995-2012) IN AREAS 3(1-4) AND AREA 1 HAVE BEEN UPDATED TO REFLECT FINAL ESTIMATES.

NOTE 1: 1979 CHINOOK CATCHES FROM 1995-1998 ARE REPORTED BY CALENDAR YEAR. CATCHES FROM 2001-1999 ARE REPORTED BY CHINOOK YEAR (OCT-SEPT)

NOTE 2: 1999 CATCHES ARE REPORTED ACCORDING TO FISHERY/STOCKS UNDER THE 1999 ANNEX IV PROVISIONS

Table 53. Preliminary 2014 South Coast Sockeye Catch by Fishery and Area

SOCKEYE*

Fishery	Gear	Fishery (Area)	Numbers			
			Non-Fraser Kept	Unknown Origin	Fraser Kept	All Stocks Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)			35,169	23
	T'aaq-wiihak	WCVI AABM Chinook (23 - 27, 123 - 127)			91	
	Area H Troll	Fraser Sockeye (12,13)	214		196,592	18
	Area H Troll	Fraser Sockeye (29)			107,993	8
	Area H Troll	JST Chum (12,13)				31
	Area H Troll	MVI Chum (14)				
	Area B Seine	Barkley Sockeye (23)	243,190			148
	Area B Seine	Fraser Sockeye (12,13)	7,252		3,493,688	35,509
	Area B Seine	Fraser Sockeye (16)			26,166	8
	Area B Seine	Fraser Sockeye (29)	43		1,285,134	27,867
	Area B Seine	Mainland Pink (12)				
	Area B Seine	Nitinat Chum (21, 121)				
	Area B Seine	JST Chum (12,13)			29	90
	Area B Seine	Fraser Chum (29)				
	Area B Seine	MVI Chum (14)				
	Area D Gillnet	Barkley Sockeye (23)	169,912			91
	Area D Gillnet	Barkley Chum (23)				
	Area D Gillnet	Somass Chinook (23)				
	Area D Gillnet	Clayoquot Chum (24)				
	Area D Gillnet	Tlupana Chinook (25)				
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	1,795		1,174,329	71
	Area D Gillnet	JST Chum (12,13)			156	53
	Area D Gillnet	MVI Chum (14)				
	Area E Gillnet	Fraser Sockeye (29)			1,625,457	37
	Area E Gillnet	Fraser Chum (29)			670	21
	Area E Gillnet	Nitinat Chum (21, 121)				
	Area E Gillnet	Cowichan Chum (Area 18)				
	Maa-nulth HA	Henderson Sockeye (23)	970			
Total Commercial Catch			**423,376**	**0**	**7,945,474**	**63,975**
Recreational	Sport	Juan de Fuca (19,20)			2,224	1,273
	Sport	Strait of Georgia (14-18,28,29)			103,129	3,242
	Sport	Johnstone Strait (11-13)			3,545	723
	Sport	WCVI - Inshore (20W-27)	24,200			1,174
	Sport	WCVI - Offshore (121-127)			126	36
	Sport	Fraser River			241,221	58,717
Total Recreational Catch			**24,200**	**0**	**350,245**	**65,165**
First Nations FSC		Johnstone Strait	3,849		268,548	
		Strait of Georgia	0		39,708	
		WCVI	36,020		29,739	
		Fraser River	0		560,763	4,718
Total First Nations FSC Catch			**39,869**	**0**	**898,758**	**4,718**
First Nations EO, HA, Demo		Johnstone Strait				
		Strait of Georgia				
		WCVI	192,842			
		Fraser River			827,007	2,075
Total First Nations EO Catch			**192,842**	**0**	**827,007**	**2,075**
First Nations ESSR		Johnstone Strait				
		Strait of Georgia				
		WCVI				
		Fraser River			617	
Total First Nations ESSR Catch			**0**	**0**	**617**	**0**
TOTAL - ALL FISHERIES			**680,287**	-	**10,022,101**	**135,933**

Table 54. Preliminary 2014 South Coast Pink Catch by Fishery and Area

PINK

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)	261	419
	T'aaq-wiihak	WCVI AABM Chinook (23 - 27, 123 - 127)		
	Area H Troll	Fraser Sockeye (12,13)	3,006	6,171
	Area H Troll	Fraser Sockeye (29)	-	2
	Area H Troll	JST Chum (12,13)	-	4
	Area H Troll	MVI Chum (14)	n/a	n/a
	Area B Seine	Barkley Sockeye (23)	9	46
	Area B Seine	Fraser Sockeye (12,13)	330,311	25
	Area B Seine	Fraser Sockeye (16)	50	0
	Area B Seine	Fraser Sockeye (29)	15	0
	Area B Seine	Mainland Pink (12)	0	1,000
	Area B Seine	Nitinat Chum (21, 121)		
	Area B Seine	JST Chum (12,13)	4	9
	Area B Seine	Fraser Chum (29)		
	Area B Seine	MVI Chum (14)		
	Area D Gillnet	Barkley Sockeye (23)		
	Area D Gillnet	Barkley Chum (23)		
	Area D Gillnet	Somass Chinook (23)		
	Area D Gillnet	Clayoquot Chum (24)		
	Area D Gillnet	Tlupana Chinook (25)		
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	192,950	6,179
	Area D Gillnet	JST Chum (12,13)	12	26
	Area D Gillnet	MVI Chum (14)		
	Area E Gillnet	Fraser Sockeye (29)	69	11
	Area E Gillnet	Fraser Chum (29)	0	0
	Area E Gillnet	Nitinat Chum (21, 121)		
	Area E Gillnet	Cowichan Chum (Area 18)		
Total Commercial Catch			**526,687**	**13,892**
Recreational	Sport	Juan de Fuca (19,20)	1,374	252
	Sport	Strait of Georgia (14-18,28,29)	11,003	11,367
	Sport	Johnstone Strait (11-13)	11,018	37,178
	Sport	WCVI - Inshore (20W-27)	245	204
	Sport	WCVI - Offshore (121-127)	156	338
	Sport	Fraser River		
Total Recreational Catch			**23,796**	**49,339**
First Nations FSC		Johnstone Strait	17,841	49,800
		Strait of Georgia		
		WCVI	1,852	
		Fraser River		
Total First Nations FSC Catch			**19,693**	**49,800**
		Johnstone Strait	0	0
		Strait of Georgia	0	0
		WCVI	0	0
		Fraser River		
Total First Nations EO Catch			**0**	**0**
First Nations ESSR		Johnstone Strait	332,000	
		Strait of Georgia		
		WCVI	0	0
		Fraser River		
Total First Nations ESSR Catch			**332,000**	**0**
TOTAL - ALL FISHERIES			**902,176**	**113,031**

Table 55. Preliminary 2014 South Coast AABM Chinook Catch by Fishery and Area

AABM Chinook

PST Regime	Fishery	Month	Numbers	
			Kept	Released
WCVI-AABM	Area G Troll *	Oct-13	2,358	282
		Nov-13	28	24
		Dec-13	25	23
		Jan-14	49	31
		Feb-14	586	28
		Mar-14	1,422	90
		Apr-14	13,345	230
		May-14	40,336	2,865
		Jun-14	0	0
		Jul-14	26,494	1,095
		Aug-14	10,002	780
		Sep-14	15,360	1,938
	T'aaq-wiihak	May - Sep	17,172	-
Total			**127,177**	**7,386**

Recreational	Sport	WCVI - Inshore (20W-27)	10,349	9,400
	Sport	WCVI - Offshore (121-127)	38,016	29,008
Total			**48,365**	**38,408**

First Nations	Johnstone Strait		
	Strait of Georgia		
	WCVI Offshore	3,655	
	WCVI Inshore		
	Fraser River		
Total		**3,655**	**0**

All Total	**179,197**	**45,794**

Table 56. Preliminary 2014 South Coast ISBM Chinook Catch by Fishery and Area

ISBM CHINOOK

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI Chinook		
	T'aaq-wiihak	Matchlee Inlet (25)	2,453	
	Area H Troll	Fraser Sockeye (12,13)		1,184
	Area H Troll	Fraser Sockeye (29)		226
	Area H Troll	JST Chum (12,13)		11
	Area H Troll	MVI Chum (14)		
	Area B Seine	Barkley Sockeye (23)		
	Area B Seine	Fraser Sockeye (12,13)	311	3,634
	Area B Seine	Fraser Sockeye (16)		44
	Area B Seine	Fraser Sockeye (29)	20	84
	Area B Seine	Mainland Pink (12)		
	Area B Seine	Nitinat Chum (21, 121)		
	Area B Seine	JST Chum (12,13)		15
	Area B Seine	Fraser Chum (29)		
	Area B Seine	MVI Chum (14)		
	Area D Gillnet	Barkley Sockeye (23)	668	65
	Area D Gillnet	Barkley Chum (23)		
	Area D Gillnet	Somass Chinook (23)	4	
	Area D Gillnet	Clayoquot Chum (24)		
	Area D Gillnet	Tlupana Chinook (25)	18,418	
	Area D Gillnet	Fraser Sockeye (11,12,13,14)		1,170
	Area D Gillnet	JST Chum (12,13)		15
	Area D Gillnet	MVI Chum (14)		
	Area E Gillnet	Fraser Sockeye (29)	6,512	7,761
	Area E Gillnet	Fraser Chum (29)	1	111
	Area E Gillnet	Nitinat Chum (21, 121)		
	Area E Gillnet	Nanaimo Chum (Area 17)		
Total Commercial Catch			**28,387**	**14,320**
Recreational	Sport	Juan de Fuca (19,20)	15,513	11,997
	Sport	Strait of Georgia (14-18,28,29)	31,313	32,219
	Sport	Johnstone Strait (11-13)	9,717	8,109
	Sport	WCVI - Inshore (20W-27)	34,298	22,168
	Sport	WCVI - Offshore (121-127)	n/a	n/a
	Sport	Fraser River	13,228	9,888
Total Recreational Catch			**104,069**	**84,381**
First Nations FSC		Johnstone Strait	1,637	0
		Strait of Georgia	28	1
		WCVI	1,929	
		Fraser River	22,014	77
Total First Nations FSC Catch			**25,608**	**78**
First Nations EO		Johnstone Strait		
		Strait of Georgia		
		WCVI	13	
		Fraser River	9,122	1,814
Total First Nations EO Catch			**9,135**	**1,814**
First Nations ESSR		Johnstone Strait	1,637	0
		Strait of Georgia*	3,722	25
		WCVI	28,060	
		Fraser River	10,073	
Total First Nations ESSR Catch			**43,492**	**25**
TOTAL - ALL FISHERIES			**210,691**	**100,618**

Table 57. Preliminary 2014 South Coast Coho Catch by Fishery and Area

COHO

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)	25,970	15,938
	Taaq-wiihak	WCVI AABM Chinook (23 - 27, 123 - 127)	7,022	
	Area H Troll	Fraser Sockeye (12,13)	6	1452
	Area H Troll	Fraser Sockeye (29)	0	90
	Area H Troll	JST Chum (12,13)	0	99
	Area H Troll	MVI Chum (14)	n/a	n/a
	Area B Seine	Barkley Sockeye (23)	49	15
	Area B Seine	Fraser Sockeye (12,13)	1,281	7,514
	Area B Seine	Fraser Sockeye (16)	0	66
	Area B Seine	Fraser Sockeye (29)	30	92
	Area B Seine	Mainland Pink (12)	0	0
	Area B Seine	Nitinat Chum (21, 121)		
	Area B Seine	JST Chum (12,13)	476	1,805
	Area B Seine	Fraser Chum (29)		
	Area B Seine	MVI Chum (14)		
	Area D Gillnet	Barkley Sockeye (23)	668	15
	Area D Gillnet	Barkley Chum (23)		
	Area D Gillnet	Somass Chinook (23)		
	Area D Gillnet	Clayoquot Chum (24)		
	Area D Gillnet	Tlupana Chinook (25)		
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	43	15,124
	Area D Gillnet	JST Chum (12,13)	0	1,815
	Area D Gillnet	MVI Chum (14)		
	Area E Gillnet	Fraser Sockeye (29)	17	1,752
	Area E Gillnet	Fraser Chum (29)	50	2,088
	Area E Gillnet	Nitinat Chum (21, 121)		
	Area E Gillnet	Cowichan Chum (Area 18)	0	75
Total Commercial Catch			**35,612**	**47,940**
Recreational	Sport	Juan de Fuca (19,20)	21,104	25,989
	Sport	Strait of Georgia (14-18,28,29)	14,925	10,643
	Sport	Johnstone Strait (11-13)	10,931	5,415
	Sport	WCVI - Inshore (20W-27)	20,089	5,944
	Sport	WCVI - Offshore (121-127)	23,240	10,742
	Sport	Fraser River	2,165	2,341
Total Recreational Catch			**92,454**	**61,074**
First Nations FSC		Johnstone Strait	2,193	
		Strait of Georgia	9	2
		WCVI	6,589	
		Fraser River	4,141	144
Total First Nations FSC Catch			**12,932**	**146**
First Nations EO		Johnstone Strait		
		Strait of Georgia		
		WCVI	3,064	
		Fraser River	218	5,559
Total First Nations EO Catch			**3,282**	**5,559**
First Nations ESSR		Johnstone Strait	0	0
		Strait of Georgia	5,326	1,012
		WCVI	16,625	
		Fraser River	19,295	
Total First Nations ESSR Catch			**41,246**	**1,012**
TOTAL - ALL FISHERIES			**185,526**	**115,731**

Table 58. Preliminary 2014 South Coast Chum Catch by Fishery and Area

Chum

Fishery	Gear	Fishery (Area)	Numbers	
			Kept	Released
Commercial	Area G Troll	WCVI AABM Chinook (23 - 27, 123 - 127)	1,216	241
	Taaq-wiihak	WCVI AABM Chinook (23 - 27, 123 - 127)	154	
	Area H Troll	Fraser Sockeye (12,13)	102	27
	Area H Troll	Fraser Sockeye (29)	6	3
	Area H Troll	JST Chum (12,13)	1,431	43
	Area H Troll	MVI Chum (14)	n/a	n/a
	Area B Seine	Barkley Sockeye (23)		
	Area B Seine	Fraser Sockeye (12,13)	20,827	381
	Area B Seine	Fraser Sockeye (16)	112	6
	Area B Seine	Fraser Sockeye (29)	292	16
	Area B Seine	Mainland Pink (12)	0	1
	Area B Seine	Nitinat Chum (21, 121)		
	Area B Seine	JST Chum (12,13)	217,907	3
	Area B Seine	Fraser Chum (29)	25	4
	Area B Seine	MVI Chum (14)		
	Area D Gillnet	Barkley Sockeye (23)	4	0
	Area D Gillnet	Barkley Chum (23)		
	Area D Gillnet	Somass Chinook (23)		
	Area D Gillnet	Clayoquot Chum (24)		
	Area D Gillnet	Tlupana Chinook (25)	3	1
	Area D Gillnet	Fraser Sockeye (11,12,13,14)	10,561	304
	Area D Gillnet	JST Chum (12,13)	68,156	3
	Area D Gillnet	MVI Chum (14)		
	Area E Gillnet	Fraser Sockeye (29)	1,645	87
	Area E Gillnet	Fraser Chum (29)	62,143	25
	Area E Gillnet	Nitinat Chum (21, 121)		
	Area E Gillnet	Cowichan Chum (Area 18)	28,455	6
Total Commercial Catch			**413,039**	**1,151**
Recreational	Sport	Juan de Fuca (19,20)	72	21
	Sport	Strait of Georgia (14-18,28,29)	546	-
	Sport	Johnstone Strait (11-13)	39	28
	Sport	WCVI - Inshore (20W-27)	32	7
	Sport	WCVI - Offshore (121-127)	63	7
	Sport	Fraser River	1,479	3,562
Total Recreational Catch			**2,231**	**3,625**
First Nations FSC		Johnstone Strait	113	0
		Strait of Georgia	387	0
		WCVI	1,150	
		Fraser River	39,234	27
Total First Nations FSC Catch			**40,884**	**27**
First Nations EO		Johnstone Strait		
		Strait of Georgia		
		WCVI		
		Fraser River	98,576	
Total First Nations EO Catch			**98,576**	**0**
First Nations ESSR		Johnstone Strait	0	0
		Strait of Georgia	9,648	0
		WCVI	35,352	0
		Fraser River	18,881	0
Total First Nations ESSR Catch			**63,881**	**0**
TOTAL - ALL FISHERIES			**618,611**	**4,803**

Table 59. Preliminary 2014 Southern B.C. Commercial Catch Totals by Gear and Area

Commercial total, all species

License Group	Fishing Area	Adult Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook Kept	Chinook Released
Area G Troll	WCVI AABM Chinook (23-27,123-127)	35,169	23	25,970	15,938	261	419	1,216	241	110,005	7,386
Tˈaaq-wiihak Demo	WCVI AABM Chinook (23-27,123-127)	91		7,022		0	0	154		17,172	
Tˈaaq-wiihak Demo	WCVI ISBM Matchlee Inlet Chinook (25)									2,453	
Area H Troll	Fraser Sockeye (12,13)	196,806	18	6	1,452	3,006	6,171	102	27	-	1,184
Area H Troll	Fraser Sockeye (29)	107,993	8	-	90	-	2	6	3	-	226
Area H Troll	JST Chum (12,13)	-	31	-	99	-	4	1,431	43	-	11
Area H Troll	MVI Chum (14)							n/a	n/a		
Area B Seine	Barkley Sockeye (23)	243,190	148	49	15	9	46	0	0	0	0
Area B Seine	Fraser Sockeye (12,13)	3,500,940	35,509	1,281	7,514	330,311	25	20,827	381	311	3,634
Area B Seine	Fraser Sockeye (16)	26,166	8	0	66	50	0	112	6	0	44
Area B Seine	Fraser Sockeye (29)	1,285,134	27,867	30	92	15	0	292	16	20	84
Area B Seine	Mainland Pinks (12)	0	0	0	0	0	1,000	0	1	0	0
Area B Seine	Nitinat Chum (21, 121)	0	0	0	0	0	0	0	0	0	0
Area B Seine	JST Chum (12,13)	29	90	476	1,805	4	9	217,907	3	0	15
Area B Seine	Fraser Chum (29)	0	0	0	0			25	4	0	0
Area B Seine	MVI Chum (14)	0	0	0	0			0	0	0	0
Area D Gillnet	Barkley Sockeye (23)	169,912	91	668	15	0	0	4	0	668	65
Area D Gillnet	Barkley Chum (23)	0	0	0	0	0	0	0	0	0	0
Area D Gillnet	Somass Chinook (23)	0	0	0	0	0	0	0	0	4	0
Area D Gillnet	Clayoquot Chum (24)	0	0	0	0	0	0	0	0	0	0
Area D Gillnet	Tlupana Chinook (25)	0	0	0	0	0	0	3	1	18,418	0
Area D Gillnet	Fraser Sockeye (11,12,13,14)	1,176,124	71	43	15,124	192,950	6,179	10,561	304	0	1,170
Area D Gillnet	JST Chum (12,13)	156	53	0	1,815	12	26	68,156	3	0	15
Area D Gillnet	MVI Chum (14)	0	0	0	0			0	0	0	0
Area E Gillnet	Fraser Sockeye (29)	1,625,457	37	17	1,752	69	11	1,645	87	6,512	7,761
Area E Gillnet	Fraser Chum (29)	670	21	50	2,088	0	0	62,143	25	1	111
Area E Gillnet	Nitinat Chum (21, 121)	0	0	0	0	0	0	0	0	0	0
Area E Gillnet	Cowichan Chum (Area 18)	0	0	0	75	0	0	28,455	6	0	0
Maa-nulth HA	Henderson Sockeye (23)										
TOTALS		**8,367,837**	**63,975**	**35,612**	**47,940**	**526,687**	**13,892**	**413,039**	**1,151**	**155,564**	**21,706**

Table 60. Preliminary 2014 Southern B.C. Recreational Catch Totals by Area

Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
Juan de Fuca (19,20)	2,224	1,273	21,104	25,989	1,374	252	72	21	15,513	11,997	-	-
Strait of Georgia (14-18,28,29)	103,129	3,242	14,925	10,643	11,003	11,367	546	-	31,313	32,219	-	-
Johnstone Strait (11-13)	3,545	723	10,931	5,415	11,018	37,178	39	28	9,717	8,109	-	-
WCVI - Inshore (20W-27)	24,200	1,174	20,089	5,944	245	204	32	7	34,298	22,168	10,349	9,400
WCVI - Offshore (121-127)	126	36	23,240	10,742	156	338	63	7		-	38,016	29,008
Fraser River	241,221	58,717	2,165	2,341	-	-	1,479	3,562	13,228	9,888	-	-
TOTAL	**374,445**	**65,165**	**92,454**	**61,074**	**23,796**	**49,339**	**2,231**	**3,625**	**104,069**	**84,381**	**48,365**	**38,408**

Table 61. Preliminary 2014 Southern B.C. First Nations Catch Estimates by Area

Fishery type	Fishing Area	Sockeye Kept	Sockeye Released	Coho Kept	Coho Released	Pink Kept	Pink Released	Chum Kept	Chum Released	Chinook ISBM Kept	Chinook ISBM Released	Chinook AABM Kept	Chinook AABM Released
FSC	Johnstone Strait	272,397		2,193	0	17,841	49,800	113	0	1,637	0		
	Strait of Georgia	39,708		9	2			387	0	28	1		
	WCVI	65,759		6,589	0	1,852		1,150		1,929	0	3,655	
	Fraser River	560,763	4,718	4,141	144			39,234	27	22,014	77		
TOTAL		**938,627**	**4,718**	**12,932**	**146**	**19,693**	**49,800**	**40,884**	**27**	**25,608**	**78**	**3,655**	**0**
EO	Johnstone Strait												
	Strait of Georgia												
	WCVI *	192,842		3,064		0				13		0	
	Fraser River **	827,007	2,075	218	5,559			98,576		9,122	1,814		
TOTAL		**1,019,849**	**2,075**	**3,282**	**5,559**	**0**	**0**	**98,576**	**0**	**9,135**	**1,814**	**0**	**0**
ESSR	Johnstone Strait					332,000	0						
	Strait of Georgia			5,326	1,012			9,648	0	3,722	25		
	WCVI			16,625				35,352		28,060			
	Fraser River	617		19,295				18,881		10,073			
TOTAL		**617**	**0**	**41,246**	**1,012**	**332,000**	**0**	**63,611**	**0**	**41,855**	**25**	**0**	**0**
All FN fisheries		**1,959,093**	**6,793**	**57,460**	**6,717**	**351,693**	**49,800**	**203,341**	**27**	**76,598**	**1,917**	**3,655**	**0**

* Does not include T'aaq-wiihak which is included in the Commercial catch for WCVI

** Includes EO, Harvest Agreement and First Nation Demonstration fisheries in the Fraser River

Table 62. Preliminary 2014 South Coast Test Fishery Catches

Test-Fisheries	Sockeye retain	Sockeye release	Coho retain	Coho release	Pink retain	Pink release	Chum retain	Chum release	Chinook retain	Chinook release	GRAND TOTAL
Albion Chinook Gillnet	2,273	0	0	10	0	0	3,912	0	1,467	0	**7,662**
Albion Chum Gillnet	1,812	1	0	142	0	0	7,856	0	278	0	**10,089**
Area 12 Chum Seine	1,191	23	0	1,564	202	42	29,015	5,439	0	24	**37,500**
Naka Creek Sockeye Gillnet	758	0	0	40	1,719	0	2	0	0	4	**2,523**
Area 13 Sockeye Seine	55,015	547,113	0	105	25,297	13,491	76	357	0	257	**641,711**
Area 23 Sockeye Seine	11,834	8,944	0	3	0	0	0	0	0	108	**20,889**
Blinkhorn Sockeye Seine	51,017	733,139	0	404	31,912	76,244	74	760	0	328	**893,878**
Cowichan Chum Seine	0	0	0	13	0	0	1,342	0	0	0	**1,355**
Saanich Chum Seine	0	0	0	3	0	0	45	45	0	0	**93**
Round Island Sockeye Gillnet **	3,547	9	65	30	1,007	1	22	0	14	5	**4,700**
San Juan Sockeye Seine	11,163	237	0	2,328	0	185	0	98	0	257	**14,268**
San Juan Sockeye Gillnet	6,336	0	128	233	29	7	22	1	137	238	**7,131**
Whonnock Gillnet	6,471	119	77	1	1	0	774	11	763	31	**8,248**
Cottonwood Gillnet	5,429	51	3	44	1	0	80	2	140	47	**5,797**
Qualark Gillnet	5,535	1	6	9	0	0	3	0	261	278	**6,093**
Area 29 Gulf Troll	1,568	51	0	2	0	0	0	0	2	9	**1,632**
Grand Total	**163,949**	**1,289,688**	**279**	**4,931**	**60,168**	**89,970**	**43,223**	**6,713**	**3,062**	**1,586**	**1,663,569**

** coho given to local 1st Nations

Note: Jacks included in all Testfishing catches if encountered

D. 2014 UPDATE REPORTS FOR SALMONID ENHANCEMENT PROGRAMS IN THE UNITED STATES AND CANADA

The Pacific Salmon Treaty between Canada and the United States requires that information be exchanged annually regarding operation of and plans for existing enhancement projects, plans for new projects, and views concerning the other country's enhancement projects. In 1988, a committee was formed to develop recommendations for the pre- and post-season and enhancement report formats. In summary, the committee proposed that:

- detailed reports on existing enhancement facilities of the type produced in 1987 be prepared every four years;
- the Parties will annually update information on eggs taken, fry or smolt released and adults back to the facility; significant changes in facility mission or production will be highlighted in narratives; and
- the Parties will provide periodic reports through the appropriate panels on new enhancement plans.

1. 2004 ANNUAL REPORT ON THE SALMON ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

2. 2005 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

3. 2006 ANNUAL REPORT ON THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

5. 2007 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

6. 2008 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

7. 2009 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

8. 2010 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

9. 2011 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

10. 2012 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

11. 2013 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

12. 2014 ANNUAL REPORT OF THE SALMONID ENHANCEMENT ACTIVITIES OF THE UNITED STATES

This report had not been received by March 31, 2015.

13. 2006 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

14. 2007 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

15. 2008 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

16. 2009 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

17. 2010 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

18. 2011 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

19. 2012 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

20. 2013 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

21. 2014 REPORT ON THE SALMONID ENHANCEMENT PROGRAM IN BRITISH COLUMBIA

This report had not been received by March 31, 2015.

Reports of the Joint Technical Committees

PART V
REPORTS OF THE JOINT TECHNICAL COMMITTEES

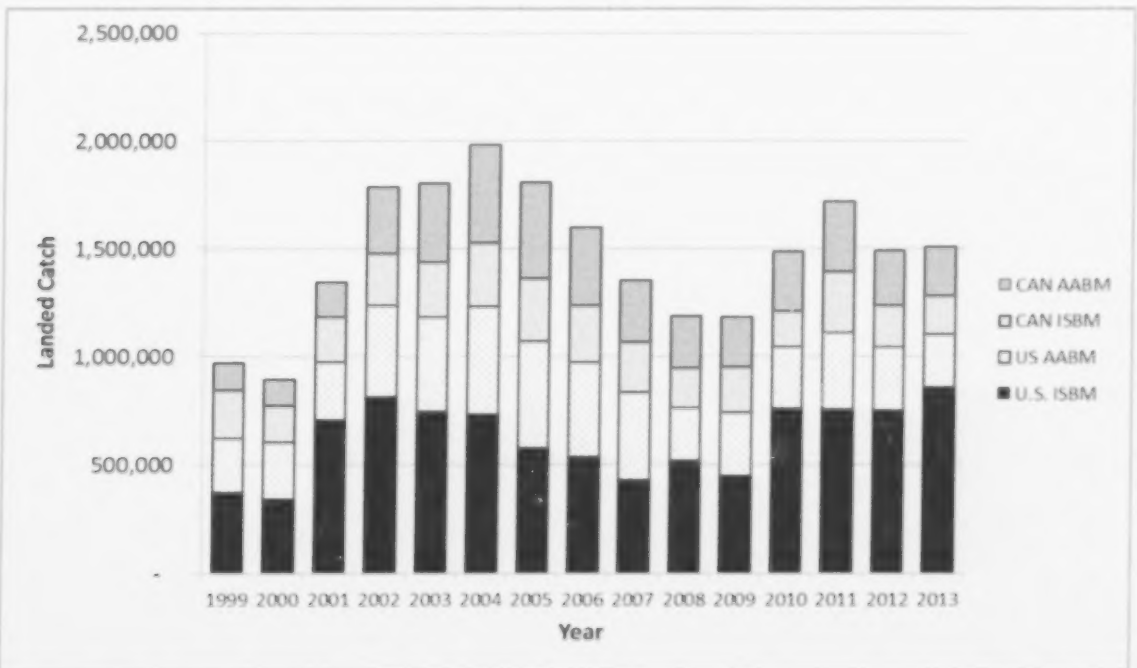
Executive summaries of reports submitted to the Commission by the joint technical committees during the period April 1, 2014 to March 31, 2015 are presented in this section. Copies of the complete reports are available from the library of the Pacific Salmon Commission.

A. JOINT CHINOOK TECHNICAL COMMITTEE

ANNUAL REPORT OF CATCH AND ESCAPEMENT FOR 2013
TCCHINOOK (14)-2 – June 2014

The Pacific Salmon Treaty (PST) requires the Chinook Technical Committee (CTC) to report annual catch and escapement data for Chinook salmon stocks that are managed under the purview of the Treaty. The CTC provides an annual report to the Pacific Salmon Commission (PSC) to fulfill this obligation as agreed by Canada and the U.S. under Chapter 3 of the Treaty. This report contains four sections: Chinook salmon catches, escapements, stock status providing an indication of stock performance in the context of management objectives, and a summary of the Sentinel Stocks Program (SSP) for 2013.

Annual catch data are compiled by Canada and the U.S. for their respective jurisdictions within the PST area according to fishery regimes, regional locations, and gear type with estimates of incidental mortality (IM). Section 1 summarizes fishery catches by region and available estimates of IM by fishery in 2013, with accompanying commentary on the fisheries, management, and derivation of IM. Landed catch (LC) is fully reported in the appendices for each geographic area covered under the PST; a summary for all PSC Aggregate Abundance Based Management (AABM) and Individual Stock Based Management (ISBM) fisheries, from 1999 to 2013, is provided in the figure below. Time series of available IM estimates are provided in Appendix A for individual fisheries. Appendix A also includes a coastwide summary of the historical time series of LC, IM, and their sum, total mortality (TM), across all AABM and ISBM fisheries.

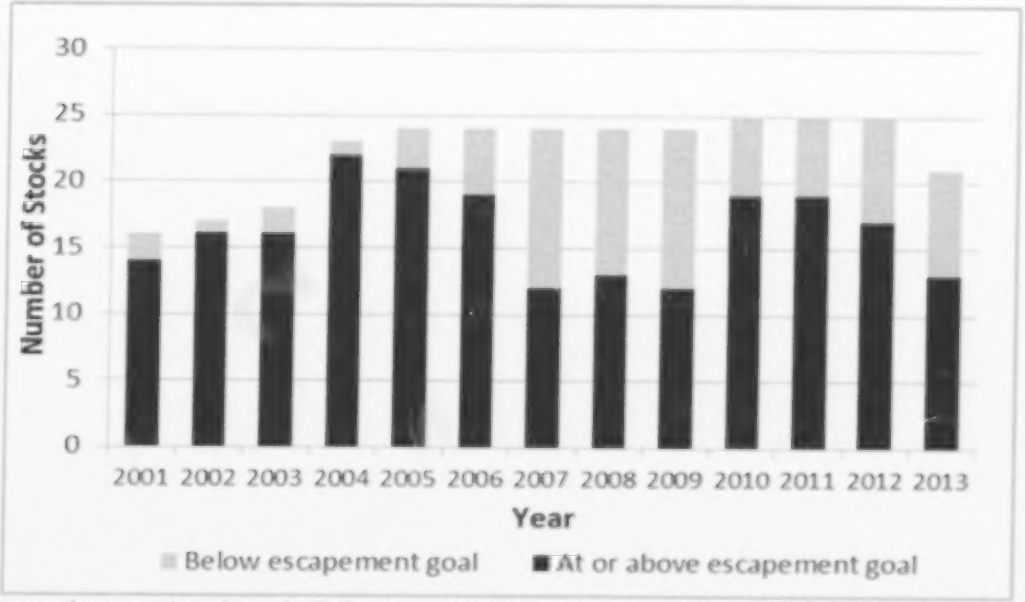


Estimates of landed catch for U.S. and Canada AABM and ISBM fisheries 1999–2013.

The preliminary estimate of total LC of Chinook salmon for all PSC fisheries in 2013 is 1,448,038 of which 1,104,311 were taken in U.S. fisheries and 405,727 were taken in Canadian fisheries. The estimated total IM associated with this harvest is 232,096 nominal Chinook salmon. The TM for all PSC fisheries in nominal fish was 1,680,134 Chinook salmon, of which 1,189,685 were taken in U.S. fisheries and 490,449 were taken in Canadian fisheries. For U.S. fisheries, 82% of the LC and 80% of TM occurred in ISBM fisheries; in Canada, 43% of the LC and 46% of TM occurred in ISBM fisheries. For some component sport fisheries, 2013 LC and IM estimates are not yet available.

Section 2 includes an assessment of escapement for PST escapement indicator stocks/stock aggregates with CTC accepted biologically based goals (21 stocks) as well as escapement data for the other indicator stocks/stock aggregates (25 stocks). For eight of these, the escapement goal is defined as a range; for the remaining 13, the escapement goal is the point estimate of SMSY (escapement producing maximum sustained yield). Annual escapements that are more than 15% below the lower end of the range or the SMSY point estimate are noted. The CTC will continue to review escapement goals for stocks as they are provided by respective agencies.

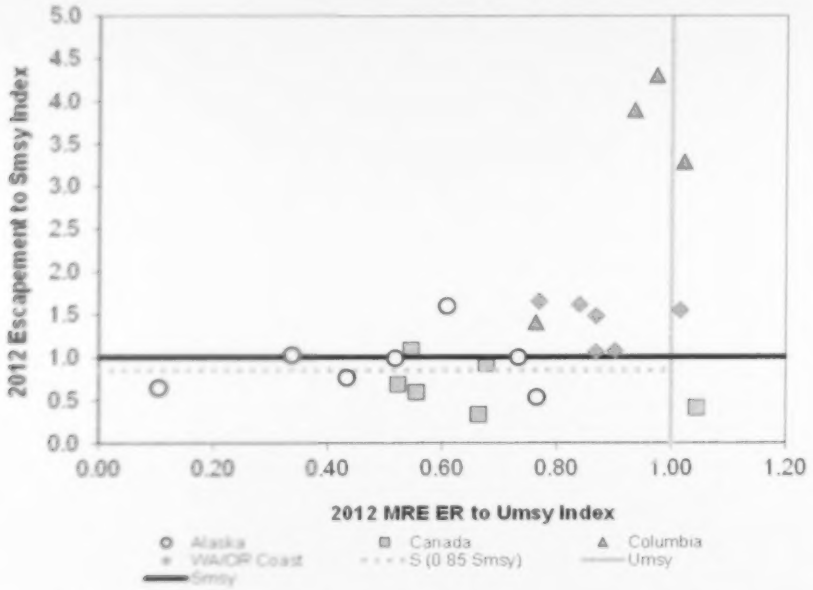
From 1999 to 2012, the percentage of stocks that met or exceeded escapement goals or goal ranges has varied from 50% to 96%. In 2013, 13 of 21 stocks (62%) met or exceeded escapement objectives. Of the eight stocks below goal, three stocks (Chilkat, Taku, and Queets fall) were within 15% of the target goal. Five stocks were more than 15% below goal: Unuk, Harrison, Cowichan, Queets spring/summer, and Hoh spring/summer).



Number and status of stocks with CTC-accepted escapement goals for 1999–2013. The Keta, Blossom, and King Salmon rivers and Andrews Creek stocks have been dropped as escapement indicator stocks in 2013, bringing the total number of stocks with CTC-accepted escapement goals to 21 in 2013.

A synoptic evaluation of stock status that summarizes the performance of those stocks relative to established goals over time is presented in Section 3 for many of the escapement indicator stocks. This evaluation draws upon the catch information (Section 1), escapement information (Section 2), and exploitation rates and other information to evaluate the status of stocks. Synoptic plots present both the current status of stocks and the history of the stocks relative to PST management objectives; this information clearly summarizes

the performance of fisheries management relative to stocks achieving established or potential goals. A synoptic summary figure for 20 stocks with 2012 data shows that the majority of stocks were in the safe zone. One stock (Cowichan) was in the high risk zone and six stocks (Situk, Alsek, Unuk, Harrison, Nicola, and Lower Shuswap) were in the low escapement and low exploitation zone. One stock (Columbia Upriver Brights) experienced high exploitation, but escapement exceeded the escapement goal objective. The Washington and Oregon coastal stocks clustered closer to the 1.0 index lines than the other regional groups. When stock status was examined by region there was not a strong regional pattern.



Synoptic summary by region of stock status for stocks with escapement and exploitation rate data in 2012 (escapement and exploitation rate data for each stock was standardized to the stock-specific escapement goal and UMSY reference points).

A summary of the 2013 SSP is presented in Section 4. The goal of the SSP is to improve estimates of escapement for Chinook salmon stocks in the following five coastal areas: Northern British Columbia (NBC), Fraser River, West Coast Vancouver Island (WCVI), Puget Sound, and North Oregon Coast (NOC) to a level that meets or exceeds bilateral assessment accuracy and precision standards. The 2013 season is the fifth year of the program. In 2013, the PSC approved $1,947,600 in funding for 12 projects. Objectives of the funded projects were (1) to estimate escapements for stocks in the Nass and Skeena rivers (NBC), the Chilko and South Thompson rivers (Fraser), the Burman, Marble, Sarita, and Tranquil rivers (WCVI), the Snohomish, Stillaguamish, and Green rivers (Puget Sound), and the Siletz and Nehalem rivers (NOC); and (2) to estimate the aggregate size of the terminal returns to the NOC and to WCVI. Escapement estimates and methods used to obtain those estimates are described in Section 4 and Appendix C for each of the funded programs.

In 2014, the CTC adopted an escapement goal for Grays Harbor fall Chinook salmon of 13,326 spawners (Appendix D).

B. JOINT CHUM TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

C. JOINT COHO TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

D. JOINT NORTHERN BOUNDARY TECHNICAL COMMITTEE

No reports were finalized for publication during this reporting period.

E. JOINT TRANSBOUNDARY TECHNICAL COMMITTEE

ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 2009
TCTR (14)-2 – October 2014

Preliminary estimates of harvests and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 2009 are presented and compared with historical patterns. Average, unless stated differently, refers to the 1999–2008 average. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Preliminary results from transboundary river sockeye salmon Oncorhynchus nerka enhancement projects are also reviewed.

Stikine River

The 2009 Stikine River sockeye salmon terminal run estimate was 185,000 fish, of which approximately 125,000 fish were harvested in various fisheries including test fisheries. An estimated 60,000 Stikine River fish escaped to spawn, including 13,000 fish that migrated to the Tuya River block that were not harvested. The run and harvest were below average. The Tahltan Lake sockeye salmon escapement of 30,000 was on the upper end of the escapement goal range (18,000 to 30,000 fish). The estimated U.S. commercial harvest of Stikine River sockeye salmon in Districts 106 and 108, including the Stikine River subsistence fishery, was 74,000 fish. The Canadian inriver commercial harvest was 42,000 and aboriginal fishery harvest was 5,000 fish. The inriver test fishery harvested 1,300 sockeye salmon and there was no marine test fishery for sockeye salmon in 2009. Weekly inseason run projections from the Stikine Management Model (SMM) ranged from 176,000 to 234,000 sockeye salmon; the final inseason model prediction was 182,000 fish, with a total allowable catch (TAC) of 118,000 fish. Weekly inseason run projections using other methods ranged from 132,000 to 182,000 sockeye salmon. The final inseason run size based on other methods was 161,000 with a TAC of 95,000 fish. Based on the postseason run size estimates (185,000) and TAC calculations of 59,000 Stikine River fish for each country, Canada harvested 79% and the U.S. harvested 124% of their respective TACs. Broodstock collection removed 3,000 sockeye salmon and otolith sampling removed 350 sockeye salmon from the escapement to Tahltan Lake leaving a spawning escapement of 27,300 fish. The estimated spawning escapement of 17,200 mainstem Stikine River sockeye salmon was below the goal range of 20,000 to 40,000 fish for this stock group.

The 2009 Stikine River Chinook salmon (non large salmon) terminal run estimate was 16,000 fish, of which approximately 3,700 fish were harvested in various fisheries. An estimated 12,800 Stikine River fish escaped to spawn, below the escapement goal range of 14,000 to 28,000 large Chinook. The run and harvest were below their respective averages. The Little Tahltan River large Chinook salmon escapement of 2,245 fish was below the escapement goal range of 2,700 to 5,300 Chinook. The estimated U.S. commercial harvest of Stikine River Chinook salmon in Districts 108 gillnet, test, troll, subsistence, and sport fisheries was 1,300 fish. The estimated Canadian commercial, aboriginal, test, and sport fisheries harvest was 2,3 00 fish. There was no inriver test fishery for Chinook salmon in 2009; however, 31 large Chinook salmon were harvested in inriver sockeye test fisheries. Managers used the m-r, model, and other assessment estimates to generate inseason run sizes after week 23. The inseason run projections were persistent throughout the course of the fishery in predicting a terminal run size that was less than the preseason forecast of 32,000

fish. Weekly inseason run projections ranged from 19,900 to 25,700 Chinook salmon. The postseason estimate run size estimate of 15,000 large Chinook salmon indicated zero TAC.

The 2009 run size of Stikine River coho salmon cannot be quantified. The U.S. marine harvest of Stikine River coho salmon is also unknown since there is no stock identification program for this species. The estimated mixed stock coho salmon harvest in Districts 106 was 145,000 fish (51% AK hatchery) and in District 108 the estimated harvest was 31,000 fish (28% AK hatchery); both districts were near average. The Canadian inriver coho salmon harvest of 6,000 fish was above average. The aerial survey count of 2,700 fish from six index sites combined was below average. The cumulative CPUE observed in the coho test fishery was also below average.

Taku River

The postseason estimate of the 2009 Taku River terminal sockeye salmon run was 119,000 fish, including an estimated U.S. harvest of 36,000 fish and an estimated above-border spawning escapement of 72,000 sockeye salmon. The terminal run size was below average and the escapement was near the lower bound of the goal range of 71,000 to 80,000 fish. An estimated 35,000 Taku River sockeye salmon were harvested in the District 111 commercial fishery which was below average and an additional 1,000 were harvested in the U.S. inriver personal use fishery. Canadian inriver commercial fishery harvested 11,000 sockeye salmon and aboriginal fishery harvested 100 sockeye salmon; both were below average. The U.S. harvested an estimated 102% of their respective TAC and Canada harvested an estimated 125% of their respective TAC.

The harvest of large Chinook salmon in the Canadian commercial fishery in the Taku River was 6,800 fish. The Canadian aboriginal fishery in the Taku River harvested 200 large Chinook salmon. District 111 mixed stock gillnet fishery harvest of 5,700 large Chinook salmon was above average. Postseason genetic stock analysis estimated 5,300 to be Taku River Chinook salmon. Approximately 7% of the total harvest was estimated to be of Alaska hatchery origin. The postseason above border spawning escapement estimated from the mark-recapture program is 30,900 fish.

The estimated above border run of Taku River coho salmon in 2009 was 114,000 fish, which was average. The Canadian inriver commercial and test fishery harvest of 10,000 coho salmon was above average. After upriver Canadian harvests were subtracted from the inriver run, the above-border-spawning escapement estimate was 104,000 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 36,000 wild coho salmon in the District 111 mixed stock fishery was above average. Alaskan hatcheries contributed an estimated 33 fish or 0.1% of the District 111 harvest.

The harvest of 57,000 pink salmon in District 111 was below average. No pink salmon were reported retained in the Canadian commercial inriver fishery in 2009. The escapement of pink salmon to the Taku River as evidenced by the fish wheel catch and release of 9,225 fish was below the odd year average.

The harvest of chum salmon in the District 111 fishery was 918,000 fish; composed of 915,000 summer run fish (prior to mid-August) and 3,000 fall run fish. The harvest of summer chum salmon, primarily Alaskan hatchery stocks, is the highest on record. The harvest of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was below average. There was non-retention of chum salmon in the Canadian inriver fishery and there was no reported harvest in 2009. Although spawning escapement is not known, the Canyon Island fish wheel catch of 236 chum salmon was below average.

Alsek River

The Alsek River sockeye salmon harvest of 13,000 fish in the U.S. commercial fishery was below average. The Canadian inriver harvest was 130 sockeye salmon for Klukshu River and 700 total aboriginal harvest with no harvest reported for Village Creek. The Klukshu River weir count of 5,700 sockeye salmon was

below the goal range of 7,500 to 15,000 fish. The count of 1,200 early run sockeye salmon (count through August 15) and the late run count of 4,500 were also below average.

The Chinook salmon run to the Alsek River appeared to be average. The U.S. Dry Bay harvest of 600 large Chinook salmon was above average. The Canadian recreational fishery harvest of 20 fish was below average and the aboriginal fishery harvest of 105 was above average. The 1,600 Chinook salmon counted through the Klukshu River weir was above average and within the goal range of 1,100 to 2,300 Chinook salmon.

Current stock assessment programs prevent an accurate comparison of the Alsek River coho salmon run with historical runs. The U.S. Dry Bay harvest of 3,500 coho salmon was above average while the Canadian inriver aboriginal fishery harvest of 3 fish was below average. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, it does provide an annual index. The count of 400 coho salmon is below average.

Enhancement

Eggs and milt were collected from the year 2009 sockeye salmon escapements at Tahltan, Tatsamenie and Little Trapper lakes. A total of 4.5 million eggs were collected at Tahltan Lake, 1.2 million at Tatsamenie Lake and 150 thousand at Trapper Lake (the Trapper eggs will be planted in Tunjony Creek).

Outplants of 2008 brood-year sockeye salmon fry in May and June 2009 included, 1.4 million fry into Tahltan Lake, 832 thousand fry into Tuya Lake, 3.8 million fry into Tatsamenie Lake. Green-egg to planted-fry survivals were 58%, 84%, and 89% for the Tahltan, Tuya, and Tatsamenie, respectively. There were also 140,000 green eggs planted in Tunjony Creek in September of 2008 at Big Trapper Lake.

The egg incubation and thermal-marking program was continued at Snettisham Hatchery in 2008. Snettisham hatchery is operated by DIPAC (Douglas Island Pink and Chum, Inc.), a private aquaculture organization in Juneau. A co-operative agreement between ADFG and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADFG otolith lab to estimate the weekly contribution of fish from US/Canada TBR fry planting programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku Rivers. Estimated contribution enhanced fish to Alaskan harvest were 29,000 planted Stikine River fish to District 106 and 108, and 250 planted Taku River fish to District 111. Preliminary estimates of contributions to Canadian fisheries included 20,000 enhanced fish to Stikine River fisheries and 100 enhanced fish to the Taku River fisheries.

FINAL ESTIMATES OF TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT ENHANCEMENT ACTIVITIES IN 2010
TCTR (15)-2 – March 2015

Final estimates of harvests and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek rivers for 2010 are presented and compared with historical patterns. Average, unless defined otherwise, refers to the most recent 10-year average (2000–2009). Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of inseason management models is discussed. Final results from TBR sockeye salmon Oncorhynchus nerka enhancement projects are also reviewed.

Stikine River

The 2010 Stikine River sockeye salmon run was estimated to be 157,000 fish, of which approximately 96,000 fish were harvested in various fisheries including test fisheries. An estimated 61,000 Stikine River

fish escaped to spawn, including 13,000 fish that migrated to the Tuya River block that were not harvested. The Tahltan Lake sockeye salmon escapement of 23,000 was within the goal range (18,000 to 30,000 fish). The estimated U.S. commercial harvest of Stikine River sockeye salmon in Districts 106 and 108, including the Stikine River subsistence fishery, was 41,000 fish. The Canadian inriver commercial harvest was 3,000 fish and aboriginal fishery harvest was 7,000 fish; total harvest 50,500 fish. The inriver test fishery harvested 2,000 sockeye salmon and there was no marine test fishery for sockeye salmon in 2010. Weekly inseason run projections from the Stikine Management Model (SMM) ranged from 166,000 to 215,000 sockeye salmon; the final inseason model prediction was 215,000 fish, with a total allowable catch (TAC) of 95,000 fish. Weekly inseason run projections using other methods ranged from 166,000 to 190,000 sockeye salmon. The final inseason run size based on other methods was 181,000 with a TAC of 105,000 fish. Based on the final postseason run size estimate of 157,000 the TAC was 42,000 Stikine River fish for each country. Canada harvested 120% and the U.S. harvested 96% of their respective TACs. Broodstock collection removed 4,500 fish and otolith sampling removed 380 sockeye salmon from the escapement to Tahltan Lake leaving a spawning escapement of 18,200 fish. The estimated spawning escapement of 25,000 mainstem Stikine River sockeye salmon was within the goal range of 20,000 to 40,000 fish for this stock group.

The final 2010 Stikine River large Chinook salmon terminal run was estimated at 20,000 fish, of which approximately 4,500 fish were harvested in various fisheries. An estimated 15,000 Stikine River fish escaped to spawn, below the escapement point estimate of 17,400 Chinook salmon but within the escapement goal range of 14,000 to 28,000 large Chinook salmon. The run and harvest were both below average. The Little Tahltan River large Chinook salmon escapement of 1,100 fish was below the Canadian escapement target of 3,300 fish and below the lower bound of the escapement target range of 2,700 to 5,300 Chinook salmon. The estimated U.S. commercial harvest of Stikine River large Chinook salmon in Districts 108 gillnet, test, troll, subsistence, and sport fisheries was 1,300 fish. The estimated Canadian commercial, Aboriginal, assessment/test, and sport fisheries harvest was 3,200 fish. Traditional MR, model, and other assessment estimates are used to generate inseason run sizes from SW 23 through the remainder of the run. The inseason run projections were persistent throughout the course of the fishery in predicting a total run size that was less than the preseason forecast of 32,000 fish. Weekly inseason run projections ranged from 19,900 to 25,500 Chinook salmon. The final post season estimate run size estimate of 20,000 large Chinook salmon indicated zero TAC.

The 2010 run size of Stikine River coho salmon cannot be quantified. The U.S. terminal harvest of Stikine River coho salmon is also unknown since there is no stock identification program for this species. Mixed stock coho salmon harvest in District 106 was 226,000 fish (45% Alaska hatchery) and in District 108 harvest was 43,000 fish (41% Alaska hatchery); both were 60% above average. The Canadian inriver coho salmon harvest of 5,300 fish was well above average. The aerial survey count of 1,800 fish from six index sites combined was below average. The cumulative CPUE observed in the coho test fishery was above average.

Taku River

The final postseason estimate of the 2010 Taku River sockeye salmon run is 155,800 fish, including an estimated U.S. harvest of 46,800 fish and an estimated above border spawning escapement of 88,400 sockeye salmon. The run size was below average, but was above the escapement goal range of 71,000 to 80,000 fish. An estimated 45,800 Taku River sockeye salmon were harvested in the District 111 commercial fishery which is below average and an additional 1,000 fish were harvested in the U.S. inriver personal use fishery. Canadian inriver commercial fisheries harvested 20,200 fish and the aboriginal fishery harvested 200 fish; the commercial fishery was below average while the aboriginal catch was above average. The U.S. harvested 72% of the U.S. AC and Canada harvested 126% of the Canadian AC.

The harvest of large Chinook salmon in the Canadian commercial fishery in the Taku River was 5,240 fish. The Canadian Aboriginal fishery in the Taku River harvested 130 large Chinook salmon. District 111 mixed

stock drift gillnet fishery harvested 530 Taku large Chinook salmon, based on postseason GSI analysis. The final above border spawning escapement estimated from the MR program is 28,800 fish.

The estimated above border run of Taku River coho salmon in 2010 was 141,200 fish. The Canadian inriver commercial and test fishery harvest of 14,400 coho salmon was above average. After Canadian harvests are subtracted from the above border run, the above border spawning escapement estimate was 126,800 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 62,000 coho salmon in the District 111 mixed stock fishery was above average. Alaskan hatcheries contributed an estimated 5,100 fish or 8.3% of the District 111 harvest.

Alsek River

The Alsek River sockeye salmon harvest of 13,000 fish in the U.S. commercial fishery was below average. The Canadian inriver harvest was 400 sockeye salmon for Klukshu River and 1,700 fish in Aboriginal harvest with no harvests not reported for Village Creek. The Klukshu River weir count of 19,000 sockeye salmon was above average and the goal range of 7,500 to 15,000 fish. The count of 5,100 early run sockeye salmon (count through August 15) and the late run count of 13,900 were both above average.

The Chinook salmon run to the Alsek River appeared to be average or above average. The U.S. Dry Bay catch of 270 large Chinook salmon was below average. The Canadian recreational fishery harvest of 100 fish and Aboriginal harvest of 200 were both above average. The 2,400 Chinook salmon counted through the Klukshu River weir was above average and above the escapement goal range of 1,100 to 2,300 Chinook salmon.

Current stock assessment programs prevent an accurate comparison of the Alsek River coho salmon run with historical runs. The U.S. Dry Bay catch of 2,000 coho salmon was below average as was the Canadian inriver aboriginal fishery harvest of 4 fish. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over.

Enhancement

Eggs and milt were collected from the year 2010 sockeye salmon escapements at Tahltan, Tatsamenie and Little Trapper lakes. A total of 6.0 million eggs were collected at Tahltan Lake, and 2.1 million at Tatsamenie Lake.

Outplants of 2009 brood year sockeye salmon fry in May and June 2010 were as follows: 1.8 million fry into Tahltan Lake; 977 thousand fry into Tuya Lake; and 717 thousand fry into Tatsamenie Lake. Green-egg to stocked-fry survivals were 70%, 52%, and 58% for the Tahltan, Tuya, and Tatsamenie, respectively. Survivals were lower due to loss of 4 incubators due to IHN.

The egg incubation and thermal marking program was continued at Snettisham Hatchery in 2009. Snettisham hatchery is operated by DIPAC, a private aquaculture organization in Juneau. A cooperative agreement between ADFG and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADFG otolith lab to estimate the weekly contribution of fish from U.S./Canada TBR fry stocking programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku rivers. Final estimates of the contribution of stocked fish to Alaskan harvest were 19,000 stocked Stikine River fish to District 106 and 108, and 940 stocked Taku River fish to District 111. Final estimates of the contribution of stocked fish to Canadian fisheries included 28,000 fish to Stikine River fisheries and 630 stocked fish to the Taku River fisheries.

F. JOINT TECHNICAL COMMITTEE ON DATA SHARING

No reports were finalized for publication during this reporting period.

G. JOINT SELECTIVE FISHERY EVALUATION COMMITTEE

REVIEW OF MASS MARKING AND MARK-SELECTIVE FISHERY ACTIVITIES PROPOSED TO OCCUR IN 2013
SFEC (15)-1 – January 2015

This report provides a summary of the proposed coastwide plans for mass marking (MM) of Coho and Chinook salmon and the conduct of mark-selective fisheries (MSFs) in 2013. Issues with implications for maintenance of the coastwide coded-wire tag program are identified and recommendations are proposed.

Summary of 2013 Mass Marking Proposals

Throughout this report a mass-marked fish refers to a fish with an adipose fin clip and a double-index tag (DIT) group includes two related coded-wire tag (CWT) groups, one marked and one unmarked. The terms 'marked' and 'clipped', and likewise 'unmarked' and 'unclipped', are used interchangeably.

Mass Marking and DIT Programs

Twenty-two proposals (8 for Coho and 14 for Chinook) were received for mass marking (MM) occurring in 2013 (Appendix E). Of these, 21 were received from southern British Columbia (BC) and southern United States (US) and one proposal was received from Alaska Department of Fish and Game (ADFG) to mass mark 300,000 Chinook released into Cook Inlet. The Selective Fishery Evaluation Committee (SFEC) believes these proposals cover all MM programs of relevance to the Pacific Salmon Commission (PSC).

Within the 21 MM proposals received from southern BC and southern US, approximately 35 million Coho are proposed to be mass-marked in 2013 (Table 2 1; Figure 2 1A), a level comparable to that proposed in 2012. Essentially all hatchery Coho production intended for harvest, from southern BC and southern US hatcheries will be mass marked. Currently there are 18 proposed Coho Salmon DIT groups (Table 2 1), of which two will be released from southern BC, seven from Puget Sound, five from the Washington (WA) coast, and four from the Columbia River Basin.

Approximately 114 million Chinook are proposed to be mass marked in 2013 from southern US Chinook hatcheries (Table 2 1; Figure 2 1B). This is approximately 1 million more than were proposed for 2012. Most all hatchery Chinook production from southern US hatcheries intended for harvest will be mass marked. Currently there are 14 proposed Chinook Salmon DIT groups (Table 2 1, Appendix H), of which seven will be released from Puget Sound facilities, two from coastal facilities, and five from Columbia River facilities.

Sampling Programs

Assuming recent exploitation rates and sampling programs, the SFEC estimates the proposed mass marking of Coho stocks in 2013 will result in annual encounters of untagged marked Coho in sampling programs of approximately 400 Coho in Alaska (AK) and 3,000 Coho in Canada (Table 2 4). For southern US Chinook stocks, annual encounters of untagged marked Chinook in sampling programs are projected to be approximately 9,300 Chinook in AK, 14,000 Chinook in Canada, and 1,300 Chinook in California (Table 2 4).

Prior to MM, the adipose fin clip was employed as a visual indicator for fish containing a CWT. Consequently, sampling programs which were designed to collect heads from fish with missing adipose

fins resulted in samples of heads, all which contained CWTs. With MM, a large number of marked fish do not contain CWTs; further, CWTs must be recovered from both marked and unmarked fish to obtain data for DIT group releases to estimate fishery impacts. Electronic tag detection (ETD) equipment has been developed as a means to efficiently identify marked and unmarked fish containing CWTs. However, ETD is not employed coastwide because of continuing reservations by some agencies regarding the cost, accuracy, and practical feasibility of incorporating this technology into their sampling programs. The Alaska Department of Fish and Game (ADFG), Canadian Department of Fisheries and Oceans (CDFO), Oregon Department of Fish and Wildlife (ODFW), and California Department of Fish and Wildlife (CDFW) all conduct sampling programs which will not recover the unclipped component of DIT programs required to assess impacts of MSFs. Fisheries from which recoveries of the unmarked component of a DIT group should have been observed create gaps in analyses of fishery impacts on unmarked (wild) fish.

Considering sampling programs coastwide, some agencies already implement comprehensive electronic sampling strategies to recover CWTs from sport and commercial fisheries, while other agencies are still working to increase use of ETD. Washington State continues to fully implement electronic sampling statewide and consistently reports CWT recoveries of the unmarked components of DIT groups in recreational marine and some freshwater MSFs, as well as in non-selective fisheries (NSFs). Starting in 2008, Canada also committed to full electronic sampling and reporting of all CWTs in all commercial fisheries for Chinook. Coho in Canadian commercial fisheries are visually sampled, except for heads delivered by northern 'freezer' trollers, which are electronically sampled. Canada continues to rely on the Sport Head Recovery Program (SHRP) to recover CWTs from NSFs and MSFs alike and thus, no unmarked coded-wire-tagged recoveries are available from them. Oregon Department of Fish and Wildlife continues to use visual sampling for fall Chinook and electronic sampling for spring Chinook and Coho in the Columbia River. Beginning in 2011, ODFW initiated electronic sampling of all ocean recreational and commercial salmon fisheries off the coast of Oregon (OR).

Encounters of large numbers of mass-marked Chinook are increasingly impacting catch sampling programs in northern fisheries; for example, approximately 63% of the Chinook caught in 2012 in the southeast Alaskan troll fishery with a missing adipose fin did not contain a CWT (Figure 2 3). The increased costs to deal with the additional marked fish (e.g., storage, and shipping to and sorting of heads in the dissection laboratories) are not quantified, but will impact the programs.

A new type of electronic CWT detection wand, the "T-wand", is now available. The manufacturer believes the increased sensitivity of these wands should detect all CWTs.

Summary of 2013 Mark-Selective Fishery Proposals

MSFs have been prosecuted for Coho since 1998 and for Chinook since 2003. For 2013, the SFEC received 43 MSF proposals for Coho and Chinook salmon in CDFO, WDFW, and ODFW fisheries. The SFEC believes these proposals cover all MSFs planned for 2013 of relevance to the PSC. The proposals submitted to the SFEC for review are listed in Table 3 1 (also see Appendix F). Further details describing the proposed MSFs and comments by the SFEC are provided in Table 3 2 and Table 3 3.
Fifteen proposals were received for Coho Salmon MSFs to occur in 2013 and 29 proposals were received for Chinook Salmon MSFs. Agencies provided the majority of the requested information in each of the proposals and the proposals were submitted on time.

SFEC received five proposals for new mark-selective fisheries. Oregon Department of Fish and Wildlife and WDFW jointly submitted two proposals for commercial fisheries targeting Coho and Chinook in the Lower Columbia River. The remaining three proposals were submitted by WDFW for Chinook sport MSFs on the Snohomish and Lower Grand Ronde rivers and a commercial Chinook fishery in Grays Harbor.

Up until 2008, Chinook MSFs were largely restricted to Puget Sound and Columbia River spring Chinook. Since then, Chinook MSFs have expanded substantially in marine and freshwater areas. In 2007, 12

Chinook MSFs were prosecuted; in 2010, that number doubled to 24 Chinook MSFs and a larger number of indicator stocks are now vulnerable to being encountered in MSFs.

The majority of MSF proposals are for terminal marine or freshwater areas, each of which will impact mature fish of one to several stocks. Multiple MSFs for both Coho and Chinook are also expected to occur in ocean areas in 2013 in BC, WA (WA ocean areas 1 through 4 and the Columbia River), and OR. These fisheries will impact many stocks and also multiple broods of Chinook. Table 2 4 provides estimates of projected encounters of fish to be mass marked in 2013 in future regional fishery sampling programs. These estimates are based on the number of mass-marked fish released by each participating agency. Table 3 4 and Table 3 5 each provide historical information on encounters of tagged and marked fish to identify Coho and Chinook tagged stocks that can be expected in these areas with MSFs.

Issues and Concerns

Post-season Reports

Post-season reports on MSFs are required for each MSF prosecuted. One of the basic functions of these reports is to provide a record of how fisheries were actually prosecuted (whether they took place) and whether there were any changes in the way the fisheries and sampling programs were conducted relative to the proposal. These reports are to be submitted in the form of three tables (Appendix I). The first two tables should be submitted by the annual PSC post-season meeting following the year of the fishery. No SFEC MSF post-season report/tables were found in the US or Canadian post-season reports (Jan 2013). Although these SFEC tables are not included in the PSC post-season reports, CDFO and WDFW do provide fishery regulations and preliminary landed catch estimates for mark-selective fisheries in these reports.

Mixed-Bag Regulations

Regulations to implement MSFs are increasingly complex, making analyses to estimate impacts challenging in a number of ways. Different types of mixed bag regulations are part of the MSFs proposed by Canada, Washington, and Oregon for recreational fisheries. As MSFs expand, a variety of types of mixed bag regulations are being proposed. The regulations include a range of rules that specify when and how anglers may retain various combinations of adult and juvenile marked and unmarked fish in their daily bag limits. The SFEC is not aware of reliable methods for estimating impacts on marked and unmarked fish under mixed bag regulations and the agencies proposing these mixed bag regulations should assist in developing the analytical tools to measure the impacts of these fisheries.

Recommendations and Issues Requiring PSC Direction

Proposal Review Process

It is recommended that the PSC request agencies to submit proposals for all potential 2014 MM and MSFs by November 2013, and for agencies to provide both preliminary and final post-season reports on the conduct of MSFs within the timeframe adopted by the PSC. Agencies need to prioritize these tasks so that proposals and MSF post-season reports are completed and submitted in a timely manner.

Interagency Coordination and Cooperation

Mass marking, double-index tagging, and CWT sampling programs continue to be insufficiently coordinated to support analysis by PSC technical committees. It is also not clear that agencies are collecting adequate and necessary data to permit estimation of unmarked CWT recoveries in fisheries and escapements so that Cohort reconstructions can be carried out on the unmarked component of the DIT group releases. With the expansion of Chinook marine MSFs, the geographical range of electronic CWT sampling needs to be expanded and the number of double-index-tagged stocks needs to be increased. Specifically,

ETD needs to be implemented by ODFW for Oregon Columbia River fall Chinook fisheries and escapement to recover DIT groups for Chinook indicator stocks. In addition, DIT groups should be added for the following Chinook stocks:

- Lower Columbia River tule fall Chinook (possibly Washougal);
- Columbia River summers (Wells Hatchery);
- Snake River fall subyearlings (Lyons Ferry Hatchery);
- Willamette Spring (reinstate DIT program with electronic terminal sampling);
- North Oregon Coast (Salmon River); and,
- Mid Oregon Coast.

The PSC should continue to support technical and policy processes to develop agreements to clarify responsibilities for maintaining a functional CWT system; these processes should build upon recommendations presented by the CWT Work Group in 2008.

H. HABITAT AND RESTORATION COMMITTEE

No reports were finalized for publication during this reporting period.

Publications of the Pacific Salmon Commission

PART VI
PUBLICATIONS OF THE PACIFIC SALMON COMMISSION

Documents listed herein are available to domestic fishery agencies of Canada and the United States, research organizations, libraries, scientists and others interested in the activities of the Commission, through the offices of the Secretariat, 600 - 1155 Robson Street, Vancouver, B.C., V6E 1B5. Photocopying charges may be levied for documents which are out of print.

Reports published by the Pacific Salmon Commission after March 31, 2000 including Commission annual reports, annual reports of the Fraser River Panel, Joint Technical Committee reports and technical reports of the Pacific Salmon Commission are also available in full text format on the Commission's website at www.psc.org.

Documents listed here are those which were published during the period from 2014/15 inclusive. For previous publications, please refer to the Pacific Salmon Commission's website at www.psc.org/publications.

A. ANNUAL REPORTS

Pacific Salmon Commission 2012/13 Twenty Eighth Annual Report. November 2014.

B. REPORTS OF JOINT TECHNICAL COMMITTEES

i. Joint Chinook Technical Committee

TCCHINOOK (14)-2 *Annual Report of Catch and Escapement for 2013*. June 2014.

ii. Joint Chum Technical Committee

No reports were finalized for publication during this reporting period.

iii. Joint Coho Technical Committee

No reports were finalized for publication during this reporting period.

iv. Joint Data Sharing Technical Committee

No reports were finalized for publication during this reporting period.

v. Joint Northern Boundary Technical Committee

No reports were finalized for publication during this reporting period.

vi. Joint Transboundary Technical Committee

TCTR (14)-2 *Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2009*. October 2014.

TCTR (15)-2 *Final Estimates of Transboundary River Salmon Production, Harvest and Escapement and a Review of Joint Enhancement Activities in 2010*. March 2015.

vii. Selective Fishery Evaluation Committee

SFEC (15)-1 *Review of Mass Marking and Mark Selective Fishery Activities Proposed to Occur in 2013.* January 2015.

viii. Habitat and Restoration Committee

No reports were finalized for publication during this reporting period.

C. REPORTS OF THE FRASER RIVER PANEL

Report of the Fraser River Panel to the Pacific Salmon Commission on the 2009 Fraser River Sockeye and Pink Salmon Fishing Season. January 2015.

D. TECHNICAL REPORT SERIES OF THE PACIFIC SALMON COMMISSION

PSC Technical Report No. 30. Andel, J.E. and I.M. Boyce. *Mark-Recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2010.* April 2014.

PSC Technical Report No. 31. Andel, J.E. and I. M Boyce. *Mark-Recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2011.* June 2014.

PSC Technical Report No. 32. Boyce, I.M. and J.E. Andel. *Mark-Recapture Studies of Taku River Adult Sockeye Salmon Stocks in 2012 and 2013.* November 2014.

PSC Technical Report No. 33. Pacific Salmon Commission Joint CWT Implementation Team. *Five-Year Synthesis Report of the PSC Coded Wire Tag (CWT) Improvement Program.* February 2015.

E. PUBLICATIONS BY PACIFIC SALMON COMMISSION SECRETARIAT STAFF

Xie, Y. and F. Martens (2014) *An Empirical Approach for Estimating the Precision of Hydroacoustic Fish Counts by Systematic Hourly Sampling.* North American Journal of Fisheries Management. 34(3). 535-545.

F. REPORTS OF THE INTERNATIONAL PACIFIC SALMON COMMISSION

Responsibility for maintenance of the library of the International Pacific Salmon Fisheries Commission, on its termination December 31, 1985, was transferred to the Pacific Salmon Commission. Documents in the Library include historical archival papers which are available to researchers and other interested parties through contact with the Pacific Salmon Commission's Librarian.

Publication of John F. Roos' History of the International Pacific Salmon Fisheries Commission, and P. Gilhousen's Estimation of Fraser River Sockeye Escapements ended all publication series of the International Pacific Salmon Fisheries Commission. Copies of all in-print Progress Reports and Bulletins of the International Pacific Salmon Fisheries Commission are available free of charge through the Library of the Pacific Salmon Commission. Copies of the History of the International Pacific Salmon Fisheries Commission may also be ordered through the Library of the Pacific Salmon Commission.

G. DOCUMENTS SUBMITTED BY THE PARTIES

In compliance with provisions of the Treaty, the Parties provide annual post-season fishery reports and updates on their respective salmonid enhancement programs to the Commission. Documents received during 2014/15 were:

1. *Post Season Report for 2014 Canadian Treaty Limit Fisheries*. Fisheries and Oceans Canada. December 31, 2014.

2. *2014 Post Season Report United States Salmon Fisheries of Relevance to the Pacific Salmon Treaty*. United States Section, Pacific Salmon Commission. January 2015.

Report of the Auditors for 2014/2015

PART VII
AUDITORS' REPORT AND FINANCIAL STATEMENTS FOR THE PERIOD APRIL 1, 2014 TO MARCH 31, 2015

Financial Statements of

PACIFIC SALMON COMMISSION

Year ended March 31, 2015

KPMG LLP
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INDEPENDENT AUDITORS' REPORT

To the Commissioners of the Pacific Salmon Commission

We have audited the accompanying financial statements of the Pacific Salmon Commission, which comprise the statement of financial position as at March 31, 2015, the statements of operations and fund balances and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information. The financial statements have been prepared by management in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 12, 2015.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 12, 2015; this includes determining that the basis of accounting is an acceptable basis for the preparation of these financial statements in the circumstances, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.
KPMG Canada provides services to KPMG LLP.

Opinion

In our opinion, the financial statements as at and for the year ended March 31, 2015 are prepared, in all material respects, in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 12, 2015.

Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) to the financial statements, which describes the basis of accounting. The financial statements are prepared to assist the Pacific Salmon Commission to meet the requirements of the Treaty between the Government of Canada and the Government of the United States of America concerning Pacific Salmon effective January 1, 2013. As a result, the financial statements may not be suitable for other purposes.

Comparative Information

Without modifying our opinion, we draw attention to Note 9 to the financial statements which indicates that the comparative information presented as at and for the year ended March 31, 2015 has been restated. As part of our audit of the financial statements as at and for the year ended March 31, 2015, we audited the restatement described in Note 9 to the financial statements that was applied to restate the comparative information as at and for the year ended March 31, 2014. In our opinion, the restatement is appropriate and properly applied.

Restriction on Use

Our report is intended solely for the Commissioners and the Governments of Canada and the United States of America and should not be used by parties other than the Commissioners and the Governments of Canada and the United States of America.

KPMG LLP

Chartered Accountants

August 12, 2015
Vancouver, Canada

PACIFIC SALMON COMMISSION

Statement of Financial Position
(Expressed in Canadian dollars)

March 31, 2015, with comparative information for 2014

	General Fund	Restricted: Working Capital Fund	Restricted: Test Fishing Fund	Restricted: Special Research and Project Fund	Capital Assets Fund	Restricted: Yukon River Legacy Fund	Total	2015	2014 (Restated - note 9)
Assets									
Current assets:									
Cash	$ 1,062,841	$ -	$ -	$ 316,626	$ -	$ -	$ 316,626	$ 1,379,467	$ 2,056,811
Accounts receivable	139,772	1,129	10,056	108,456	-	6,357	125,998	265,770	103,795
Due from trust funds (note 6)	130,968	-	-	-	-	-	-	130,968	689,175
Prepaid expenses	30,225	-	-	-	-	-	-	30,225	45,807
Short-term investments	1,878,002	102,694	884,075	-	-	487,922	1,474,691	3,352,693	3,352,365
	3,241,808	103,823	894,131	425,082	-	494,279	1,917,315	5,159,123	6,247,953
Capital assets (note 4)	-	-	-	-	493,335	-	493,335	493,335	387,124
	$ 3,241,808	$ 103,823	$ 894,131	$ 425,082	$ 493,335	$ 494,279	$ 2,410,650	$ 5,652,458	$ 6,635,077
Liabilities and Fund Balances									
Current liabilities:									
Accounts payable and accrued liabilities (note 3)	$ 854,541	$ -	$ -	$ -	$ -	$ -	$ -	$ 854,541	$ 634,757
Deferred revenue (note 3)	939,818	-	-	-	-	-	-	939,818	1,409,818
	1,794,359	-	-	-	-	-	-	1,794,359	2,044,575
Accrued employee future benefit liability (notes 5, 9)	554,864	-	-	-	-	-	-	554,864	544,135
Fund balances:									
Unrestricted	892,585	-	-	-	-	-	-	892,585	855,858
Restricted	-	103,823	894,131	425,082	-	494,279	1,917,315	1,917,315	2,803,385
Invested in capital assets	-	-	-	-	493,335	-	493,335	493,335	387,124
	892,585	103,823	894,131	425,082	493,335	494,279	2,410,650	3,303,235	4,046,367
	$ 3,241,808	$ 103,823	$ 894,131	$ 425,082	$ 493,335	$ 494,279	$ 2,410,650	$ 5,652,458	$ 6,635,077

See accompanying notes to financial statements.

Approved on behalf of the Commission:

Chair, Standing Committee on Finance and Administration

Vice-Chair, Standing Committee on Finance and Administration

PACIFIC SALMON COMMISSION

Statement of Operations and Fund Balances
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	General Fund	Restricted: Working Capital Fund	Restricted: Test Fishing Fund	Restricted: Special Research and Project Fund	Restricted: Capital Assets Fund	Restricted: Yukon River Legacy Fund	Restricted: Total	2015	2014 (Restated - note 9)
Revenue:									
Contributions from contracting parties (note 3)	$ 3,759,272	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,759,272	$ 3,759,272
Grants	32,397	-	-	988,440	-	-	988,440	1,020,837	2,958,410
Interest	26,490	1,301	10,056	-	-	6,357	17,714	44,204	43,364
Administration fees	189,577	-	-	-	-	-	-	189,577	167,593
Other	48,040	-	-	-	-	-	-	48,040	19,056
Foreign exchange	161,412	-	-	-	-	-	-	161,412	124,649
Gain on disposal of capital assets	-	-	-	-	950	-	950	950	3,224
Test fishing	-	-	2,226,175	-	-	-	2,226,175	2,226,175	2,299,903
	4,217,188	1,301	2,236,231	988,440	950	6,357	3,233,279	7,450,467	9,375,471
Expenses:									
Amortization	-	-	-	-	144,713	-	144,713	144,713	137,897
Salaries and employee benefits	2,984,198	-	-	-	-	-	-	2,984,198	2,936,530
Travel and transportation	71,073	-	-	-	-	102	102	71,175	72,826
Rents and communication	123,720	-	-	-	-	-	-	123,720	130,563
Printing and reproductions	6,047	-	-	-	-	-	-	6,047	8,935
Contract services	683,333	-	-	-	-	20,060	20,060	703,393	677,860
Materials and supplies	62,116	-	-	-	-	-	-	62,116	66,668
Test fishing	-	-	2,145,770	-	-	-	2,145,770	2,145,770	2,022,687
Consultations and workshops	-	-	-	1,952,467	-	-	1,952,467	1,952,467	2,635,437
	3,930,487	-	2,145,770	1,952,467	144,713	20,162	4,263,112	8,193,599	8,689,403
Excess (deficiency) of revenue over expenses	286,701	1,301	90,461	(964,027)	(143,763)	(13,805)	(1,029,833)	(743,132)	686,068
Fund balance, beginning of year	855,858	102,522	803,670	1,389,109	387,124	508,084	3,190,509	4,046,367	3,360,299
Interfund transfers	(249,974)	-	-	-	249,974	-	249,974	-	-
Fund balance, end of year	$ 892,585	$ 103,823	$ 894,131	$ 425,082	$ 493,335	$ 494,279	$ 2,410,650	$ 3,303,235	$ 4,046,367

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Statement of Cash Flows
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	2015	2014 (Restated - note 9)
Cash provided by (used in):		
Operations:		
Excess (deficiency) of revenue over expenses	$ (743,132)	$ 686,068
Items not involving cash:		
Amortization	144,713	137,897
Gain on disposal of capital assets	(950)	(3,224)
Accrued employee benefits	10,729	(40,614)
Net change in non-cash operating working capital	161,598	676,407
	(427,042)	1,456,534
Investing:		
Additions to capital assets	(251,224)	(197,974)
Proceeds on sale of capital assets	1,250	3,520
Redemption of short-term investments	3,352,365	2,550,000
Purchase of short-term investments	(3,352,693)	(3,352,365)
	(250,302)	(996,819)
Financing:		
Decrease in bank indebtedness	-	(73,412)
Increase (decrease) in cash	(677,344)	386,303
Cash, beginning of year	2,056,811	1,670,508
Cash, end of year	$ 1,379,467	$ 2,056,811

See accompanying notes to financial statements.

PACIFIC SALMON COMMISSION

Notes to Financial Statements
(Tabular amounts expressed in Canadian dollars, unless otherwise noted)

Year ended March 31, 2015

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1. Nature of organization:

Pacific Salmon Commission (the "Commission") was established by a Treaty between the Governments of Canada and the United States of America (the "Contracting Parties") to promote cooperation in the management, research, and enhancement of Pacific Salmon stocks. The Treaty was ratified on March 18, 1985 and amended subsequently.

2. Significant accounting policies:

(a) Basis of accounting:

These financial statements have been prepared in accordance with the financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 12, 2015. The financial reporting provisions of Chapter IX of the Pacific Salmon Commission Bylaws amended and adopted February 12, 2015 require the financial statements to be prepared in a manner consistent with generally accepted accounting principles ("GAAP") with the following exceptions:

(*i*) Expenses are recognized at the time that the commitment for goods and services are made through purchase orders, rather than at the time the goods or services are received. This exception is to comply with Chapter IX, Section D, Rule 10 of the Bylaws.

(*ii*) The Commission uses the triennial pension valuation report provided by the International Fisheries Commissions Pension Society (IFCPS) to determine the yearly pension expense. The pension expense consists of the employer portion of the current service pension contribution plus any additional yearly payments required by the IFCPS (as shown in the current valuation report) that are necessary to extinguish the unfunded portion of the pension obligation. Other post-employment benefits such as extended medical plans and life insurance are recorded as an expense in the fiscal year in which the respective invoice is dated. This exception is to comply with Chapter IX, Section D, Rule 11 of the Bylaws.

Canadian GAAP has been interpreted to mean Canadian Accounting Standards for Not-for-Profit Organizations in Part III of the CPA Canada Handbook ("Not-for-Profit Standards").

(b) Fund accounting and revenue recognition:

The Commission follows the restricted fund method of accounting for contributions.

Restricted contributions related to general operations are initially deferred and recognized as revenue of the General Fund in the year in which the related expenses are incurred. All other restricted contributions are recognized as revenue of the appropriate restricted fund.

Unrestricted contributions are recognized as revenue of the General Fund in the year they are received or receivable, if the amount to be received can be reasonably estimated and collection is reasonably assured.

2. Significant accounting policies (continued):

(b) Fund accounting and revenue recognition (continued):

The Fund classifications are as follows:

(*i*) The General Fund includes funds provided annually through contributions from the Contracting Parties. By agreement of the Contracting Parties, any unexpended balance remaining at the end of one fiscal year may be used to offset contributions in the following year or may be used to offset a shortfall between contributions and approved expenses in the following year. As a result, all amounts are recognized as revenue once received or receivable.

(*ii*) The Working Capital Fund represents monies contributed by the Contracting Parties to be used on a temporary basis to satisfy the capital requirements of the Committee until receipt of new contributions from the Contracting Parties at the beginning of a fiscal year, or for special programs not contained in the regular budget but approved during the fiscal year. Any surplus above a pre-determined fixed limit in the account at the end of the fiscal year is transferred to the general fund and is treated as unrestricted income.

(*iii*) The Test Fishing Fund is established as a revolving fund in which a portion of net test fishing revenues realized in years of high abundance are reserved, to be used to support test fishing programs in years of low abundance and when conservation concerns are an issue.

(*iv*) The Special Research and Project Fund represents monies set aside to fund additional programs as determined by the Contracting Parties, including studies related to Coho Salmon, US Grant Funds for Chinook Technical Committee Support, Chinook Sentinel Stocks Program, Anadromous Fish Grant, Decline in Survival of Fraser River Sockeye, and the Killer Whale Workshop.

(*v*) The Capital Assets Fund reflects the Commission's capital asset transactions. Amortization is charged to the Capital Assets Fund.

(*vi*) The Yukon River Legacy Fund represents funds transferred to the Commission from the Yukon River Panel Society (the "Society"), upon the dissolution of the Society. The use of the funds is restricted to expenditures authorized by the Yukon River Panel.

Transfers between the funds are reviewed and approved by the Commissioners.

(c) Financial instruments:

Financial instruments are recorded at fair value on initial recognition. Freestanding derivative instruments that are not in a qualifying hedging relationship and equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently recorded at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Commission has not elected to carry any such financial instruments at fair value.

2. Significant accounting policies (continued):

(c) Financial instruments (continued):

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs, which are amortized using the straight-line method.

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indicators of impairment. If there is an indicator of impairment, the Commission determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Commission expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(d) Capital assets:

Capital assets are stated at cost less accumulated amortization. Costs of repairs and replacements of a routine nature are charged as a current expense while those expenses which improve or extend the useful life of the assets are capitalized. Amortization is provided using the straight-line method as follows:

Asset	Rate
Automobiles	5 years
Boats	5 years
Computer equipment and software	3 years
Equipment	5 years
Furniture and fixtures	10 years
Leasehold improvements	Over life of lease

(e) Income taxes:

The Commission is a non-taxable organization under the Foreign Missions and International Organizations Act (1991).

2. Significant accounting policies (continued):

(f) Post-employment benefits:

The Commission has a defined benefit pension plan covering its employees. The benefits are based on years of service and final average salary. The Commission also sponsors a defined benefit life insurance and health care plan for substantially all retirees and employees. The Commission recognizes, annually, an expense equal to the amount of the required payment set forth by the pension plan, which is based on a triennial pension valuation. The Commission does not recognize an unfunded obligation related to the defined benefit pension plan, as referenced in note 5.

(g) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency at the year-end date are translated to equivalent Canadian amounts at the rate of exchange in effect at that date. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenses.

(h) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant areas requiring the use of management estimates relate to the determination of the valuation of accounts receivable, useful lives of capital assets for amortization, the estimate of liabilities and contingencies, and the assumptions with respect to post-employment benefits. Actual results could differ from those estimates.

(i) Short-term investments:

The short-term investments are managed by an external investment manager and are recorded at face value plus accrued interest.

(j) Comparative information:

Certain comparative information has been reclassified to conform with this year's current financial statement presentation (note 9).

3. Related parties:

During the year ended March 31, 2015, the Commission recognized operating contributions from the Contracting Parties totaling $3,759,272 (2014 - $3,759,272). The Commission received nil (2014 - $470,000) of operating contributions from the Government of Canada and $939,818 (2014 - $939,818) of operating contributions from the Government of the United States of America relating to future periods.

3. Related parties (continued):

The Commission retains $179,772 (2014 - $210,694) of funds provided by Canada during 2006 to 2012, when the Larocque court decision required government funding in lieu of fish sales to fund test fishing operations in Canadian waters. Under the terms of the agreement, any unspent funds may be held by the Commission and used upon authorization from the Government of Canada to offset operating deficits in the Test Fishing program. The unspent amount of $179,772 has been recorded within accounts payable and accrued liabilities.

The office and warehouse premises of the Commission are provided by the Government of Canada at no charge.

Deferred revenue consists of unspent funds provided by the Contracting Parties that are reserved for future operating and capital expenditures of the Fund.

	2015	2014
Balance, beginning of year	$ 1,409,818	$ 91,675
Operating contributions received	3,289,272	5,077,415
Recognized as revenue	(3,759,272)	(3,759,272)
Balance, end of year	$ 939,818	$ 1,409,818

4. Capital assets:

March 31, 2015	Cost	Accumulated amortization	Net book value
Automobiles	$ 247,159	$ 210,529	$ 36,630
Boats	138,026	120,383	17,643
Computer equipment	675,793	595,182	80,611
Computer software	286,417	206,233	80,184
Equipment	1,578,065	1,399,236	178,829
Furniture and fixtures	369,704	287,620	82,084
Leasehold improvements	133,519	116,165	17,354
	$ 3,428,683	$ 2,935,348	$ 493,335

4. Capital assets (continued):

March 31, 2014	Cost	Accumulated amortization	Net book value
Automobiles	$ 238,694	$ 211,212	$ 27,482
Boats	138,026	114,502	23,524
Computer equipment	685,081	618,627	66,454
Computer software	224,752	202,895	21,857
Equipment	1,476,935	1,335,792	141,143
Furniture and fixtures	360,581	278,668	81,913
Leasehold improvements	133,519	108,768	24,751
	$ 3,257,588	$ 2,870,464	$ 387,124

5. Employee future benefits:

The Commission and its employees contribute to the Pension Plan of the International Fisheries Commissions Pension Society for Employees of Participating Commissions, a multi-employer defined benefit plan, with Headquarters in Canada. The Plan covers 74 employees, of which 40 are current or past employees of the Commission.

The Commission also provides employee future benefits including severance, life insurance and medical benefits. Employees are entitled to severance payments calculated based on the length of continuous service completed by the employee.

The last actuarial valuation for the pension plan was performed as at January 1, 2014 and the next valuation is scheduled for January 1, 2017. The information noted below, will be updated once the results of the valuation become available. Selected information about the Commission's defined benefit plan is as follows:

	As of January 1, 2014
Fair value of plan assets	$ 9,218,000
Benefit obligation	11,084,000
Funded status - plan deficit	$ (1,866,000)

The funded status of the plan is not included in the statement of financial position.

A significant actuarial assumption adopted in measuring the Commission's benefit obligation is the use of a discount rate of 6% and expected rate of return on assets of 6%.

During the year ended March 31, 2015, the Commission made payments totaling $153,453 (2014 - $130,800) with respect to the unfunded pension obligation. This payment is recorded as an expense and included in salaries and employee benefits on the statement of operations and fund balances.

6. Trust funds:

The Commission administers and holds, in trust, the following funds, which are not included in the Commission's financial statements:

(a) Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary and Transboundary River Restoration and Enhancement Trust Fund:

Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund ("Northern Fund") was created by the Governments of the United States of America and Canada to manage their interests in the Commission to promote cooperation in the management, research and enhancement of Pacific Salmon stocks. The Northern Boundary is a non-taxable organization under the Foreign Missions and International Organizations Act (1991) and is not subject to income tax. The income earned on these contributions is distributed by the Commission staff as directed by the Northern Fund Committee.

Southern Boundary and Transboundary River Restoration and Enhancement Trust Fund ("Southern Fund") was created by the Governments of the United States of America and Canada to manage their interests in the Commission to promote cooperation in the management, research, and enhancement of Pacific Salmon stocks. The Southern Boundary is defined as a non-taxable organization under the Foreign Missions and International Organizations Act (1991) and is not subject to income tax. The income earned on these contributions is distributed by the Commission staff as directed by the Southern Fund Committee.

During the fiscal year ended March 31, 2015, the Commission received funding for projects from the Northern Fund and Southern Fund totaling $706,804 (2014 - $2,133,619). As at March 31, 2015, the Commission had a receivable from the Northern Fund and Southern Fund of $124,262 (2014 - $166,713).

(b) Payroll Trust Funds:

The Commission administers and holds trust funds on behalf of the Government of the United States to distribute U.S. section salary under a Memorandum of Understanding. These amounts have been excluded from the statement of financial position and statement of operations and fund balances of the Commission.

(c) U.S. Expenditures Trust Funds:

The Commission administers and holds trust funds on behalf of the Government of the United States of America. They are to be expended at the direction of the Government of the United States of America. These amounts have been excluded from the statements of financial position and statement of operations and fund balances of the Commission.

6. Trust funds (continued):

(d) Yukon River Fund:

Under the terms of an interim Yukon River Salmon Agreement in 1995, the United States and Canada established the Yukon River Salmon Restoration and Enhancement ("R&E") Fund and the Commission created an account to hold associated monies. The R&E Fund and its governing Yukon River Panel were finalized in the 2002 Yukon River Salmon Agreement and associated treaty amendments. The Commission Secretariat administers and holds R&E trust funds on behalf of the Yukon River Panel. The Yukon River Panel provides direction on how the monies are to be disbursed from the Fund. These amounts have been excluded from the statements of financial position and statement of operations and fund balances of the Commission.

During the year, the R&E Fund paid $71,186 (2014 - $68,443) to the Commission for administrative services. As at March 31, 2015, the Commission had a receivable from the R&E Fund of $6,706 (2014 - $522,462), which includes amounts originally transferred from the Yukon River Panel Society of nil (2014 - $515,537) and $6,706 (2014 - $6,925), representing a reimbursement for expenses paid by the Commission on behalf of the R&E Fund.

(e) Summary of trust fund balances:

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	Total 2015	Total 2014
Assets	$ 149,467,972	$ 121,226,955	$ 2,420,154	$ 299,067	$ 675,817	$ 274,089,965	$ 240,732,520
Liabilities	$ 177,501	$ 136,982	$ 1,510,666	$ 299,067	$ 675,817	$ 2,800,033	$ 1,461,893
Fund balances	149,290,471	121,089,973	909,488	-	-	271,289,932	239,270,627
	$ 149,467,972	$ 121,226,955	$ 2,420,154	$ 299,067	$ 675,817	$ 274,089,965	$ 240,732,520

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	Total 2015	Total 2014
Fund balance, beginning of year	$ 131,497,189	$ 107,123,772	$ 649,666	$ -	$ -	$ 239,270,627	$ 205,721,317
Revenue	22,239,900	18,602,249	1,453,486	-	-	42,295,635	43,485,529
Expenses	4,446,618	4,636,048	1,193,664	-	-	10,276,330	9,936,219
	17,793,282	13,966,201	259,822	-	-	32,019,305	33,549,310
Fund balance, end of year	$ 149,290,471	$ 121,089,973	$ 909,488	$ -	$ -	$ 271,289,932	$ 239,270,627

	Northern Fund	Southern Fund	Yukon River Fund	US Payroll Trust Funds	US Expenditure Trust Funds	Total 2015	Total 2014
Cash flow provided by (used in):							
Operations	$ (337,146)	$ (1,472,438)	$ 1,268,952	$ -	$ -	$ (540,632)	$ (7,581,675)

7. Contractual obligations:

The Commission has entered into a number of project grant contracts as at March 31, 2015 for the future funding of research projects to be completed subsequent to the year-end.

These contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. As such, no liability has been accrued in the financial statements as the Commission is not liable until these conditions have been met.

As at March 31, 2015, the research project contractual obligations are $573,489 (2014 - $831,756).

8. Financial instruments:

(a) Credit risk:

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. For cash and accounts receivable, the Commission's credit risk is limited to the carrying value on the statement of financial position. Management does not believe that the Commission is subject to any significant concentration of credit risk.

(b) Liquidity risk:

Liquidity risk is the risk that an entity will not be able to meet its obligations associated with financial liabilities.

The Commission manages liquidity risk by maintaining adequate cash and available credit facilities with its banking provider. The Commission monitors the cash flow to ensure a sufficient continuity of funding from the Contracting Parties.

(c) Interest rate risk:

The Commission is not exposed to significant interest risk as it does not have amounts payable that are charged interest.

9. Change in accounting policies:

Employee future benefits:

Effective April 1, 2014, the Commission revised certain Bylaws pertaining to employee future benefits. Under the revised Bylaws, actuarial gains and losses and past services costs are no longer deferred and amortized over future periods. The pension expense consists of the employer portion of the current service pension contribution plus any additional yearly payments required by the IFCPS (as shown in the most recent triennial valuation report) that are necessary to extinguish the unfunded portion of the pension obligation.

9. Change in accounting policies (continued):

The Commission implemented the revised Bylaw retrospectively. The impact is as follows:

Statement of Financial Position at March 31, 2014	As presented	Restatements	As restated
Accrued employee future benefit liability	$ 1,113,539	$ (569,404)	$ 544,135
Unrestricted fund balance	286,454	569,404	855,858

Statement of Operations and Fund Balances for the year ended March 31, 2014	As presented	Restatements	As restated
Fund balance, beginning of year	$ 3,151,551	$ 208,748	$ 3,360,299
Salaries and employee benefits	3,297,186	(360,656)	2,936,530
Excess of revenue of expenses	325,412	360,656	686,068

Combined Financial Statements of

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND

and

SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Year ended March 31, 2015

KPMG LLP
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INDEPENDENT AUDITORS' REPORT

To the Trustees of Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund (the "Trustees")

We have audited the accompanying combined financial statements of Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund (the "Trusts"), which comprise the combined statement of financial position as at March 31, 2015, the combined statements of operations and fund balances and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information. The combined financial statements have been prepared by management in accordance with the basis of accounting in note 2(a) to the combined financial statements.

Management's Responsibility for the Combined Financial Statements

Management is responsible for the preparation and fair presentation of these combined financial statements in accordance with the basis of accounting in note 2(a) to the combined financial statements; this includes determining that the basis of accounting is an acceptable basis for the preparation of these combined financial statements in the circumstances, and for such internal control as management determines is necessary to enable the preparation of combined financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these combined financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the combined financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the combined financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the combined financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the combined financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the combined financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.
KPMG Canada provides services to KPMG LLP.

Opinion

In our opinion, the combined financial statements as at and for the year ended March 31, 2015 are prepared, in all material respects, in accordance with the basis of accounting in note 2(a) to the combined financial statements.

Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) to the combined financial statements, which describes the basis of accounting. The combined financial statements are prepared for the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and Southern Boundary Restoration and Enhancement Trust Fund to meet their reporting requirements. As a result, the combined financial statements may not be suitable for other purposes.

Restriction on Use

Our report is intended solely for the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund, Southern Boundary Restoration and Enhancement Trust Fund, Pacific Salmon Commission, the Government of Canada, and the Government of the United States of America and should not be used by parties other than the Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund, Southern Boundary Restoration and Enhancement Trust Fund, Pacific Salmon Commission, the Government of Canada, and the Government of the United States of America.

KPMG LLP

Chartered Professional Accountants

September 30, 2015
Vancouver, Canada

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Combined Statement of Financial Position
(Expressed in Canadian dollars)

March 31, 2015, with comparative information for 2014

	Northern Boundary	Southern Boundary	2015 Total	2014 Total
Assets				
Current assets:				
Cash and cash equivalents	$ 2,255,630	$ 770,308	$ 3,025,938	$ 1,390,764
Accounts receivable	7,798	670	8,468	-
Interest receivable	11,000	-	11,000	5,022
Short-term investments	1,500,000	-	1,500,000	2,500,000
	3,774,428	770,978	4,545,406	3,895,786
Investments (note 3)	145,693,544	120,455,977	266,149,521	235,274,591
	$ 149,467,972	$ 121,226,955	$ 270,694,927	$ 239,170,377
Liabilities and Fund Balance				
Current liabilities:				
Accounts payable and accrued liabilities	$ 103,509	$ 86,712	$ 190,221	$ 429,951
Due to Pacific Salmon Commission (note 6)	73,992	50,270	124,262	119,465
	177,501	136,982	314,483	549,416
Fund balances	149,290,471	121,089,973	270,380,444	238,620,961
	$ 149,467,972	$ 121,226,955	$ 270,694,927	$ 239,170,377

Contractual obligations (note 4)
Minimum fund balance (note 5)

See accompanying notes to combined financial statements.

Approved on behalf of the Trustees:

U.S. Co- Chair Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund

Can Co- Chair Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund

U.S. Co- Chair Southern Boundary Restoration and Enhancement Trust Fund

Can Co- Chair Southern Boundary Restoration and Enhancement Trust Fund

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Combined Statement of Operations and Fund Balances
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	Northern Boundary	Southern Boundary	2015 Total	2014 Total
Investment income	$ 16,993,128	$ 14,384,039	$ 31,377,167	$ 37,380,392
Interest income	26,449	7,967	34,416	58,489
	17,019,577	14,392,006	31,411,583	37,438,881
Foreign exchange gain	5,220,323	4,210,243	9,430,566	4,757,502
Expenses:				
Administrative services (note 6)	155,137	155,137	310,274	309,562
Travel and accommodation	35,127	15,918	51,045	59,816
Rents and communications	6,092	5,663	11,755	1,188
Contract services	40,051	38,708	78,759	78,844
Investment management services	764,445	636,508	1,400,953	1,222,180
Project grants	3,445,086	3,783,397	7,228,483	7,182,102
Materials and supplies	680	717	1,397	27,316
	4,446,618	4,636,048	9,082,666	8,881,008
Excess of revenue over expenses	17,793,282	13,966,201	31,759,483	33,315,375
Fund balances, beginning of year	131,497,189	107,123,772	238,620,961	205,305,586
Fund balances, end of year	$ 149,290,471	$ 121,089,973	$ 270,380,444	$ 238,620,961

See accompanying notes to combined financial statements.

NORTHERN BOUNDARY AND TRANSBOUNDARY RIVER RESTORATION AND ENHANCEMENT TRUST FUND
and
SOUTHERN BOUNDARY RESTORATION AND ENHANCEMENT TRUST FUND

Combined Statement of Cash Flows
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	Northern Boundary	Southern Boundary	2015 Total	2014 Total
Cash provided by (used in):				
Operations:				
Excess of revenue over expenses	$ 17,793,282	$ 13,966,201	$ 31,759,483	$ 33,315,375
Items not involving cash:				
Unrealized gain on investments	(10,703,010)	(9,179,751)	(19,882,761)	(26,710,317)
Gain on sale of investments	(2,274,048)	(1,881,606)	(4,155,654)	(3,115,524)
Gain on foreign exchange	(5,081,800)	(4,199,472)	(9,281,272)	(4,723,460)
Changes in non-cash operating working capital:				
Accounts receivable	(7,798)	(670)	(8,468)	-
Interest receivable	(6,833)	855	(5,978)	42,703
Due to Pacific Salmon Commission	46,023	(41,226)	4,797	79,953
Accounts payable and accrued liabilities	(102,962)	(136,768)	(239,730)	143,812
	(337,146)	(1,472,437)	(1,809,583)	(967,458)
Investing:				
Proceeds from sale of short-term investments	2,000,000	500,000	2,500,000	6,000,000
Purchase of short-term investments	(1,500,000)	-	(1,500,000)	(2,500,000)
Proceeds from sale of investments	5,017,670	4,885,978	9,903,648	17,263,916
Purchase of investments	(4,081,885)	(3,377,006)	(7,458,891)	(19,054,422)
	1,435,785	2,008,972	3,444,757	1,709,494
Increase in cash and cash equivalents	1,098,639	536,535	1,635,174	742,036
Cash and cash equivalents, beginning of year	1,156,991	233,773	1,390,764	648,728
Cash and cash equivalents, end of year	$ 2,255,630	$ 770,308	$ 3,025,938	$ 1,390,764

See accompanying notes to combined financial statements.

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1. Nature of organization:

The Northern Boundary and Transboundary River Restoration and Enhancement Trust Fund and the Southern Boundary Restoration and Enhancement Trust Fund (the "Trusts") were created by the Governments of the United States of America and Canada (the "Contracting Parties") to promote cooperation in the management, research and enhancement of Pacific salmon stocks.

2. Significant accounting policies:

(a) Basis of accounting:

These combined financial statements have been prepared in accordance with the significant accounting policies set out below. These combined financial statements are consistent with Canadian generally accepted accounting principles ("GAAP") except that they are presented on a combined basis in order to reflect the common administration of the Trusts by the management of the Pacific Salmon Commission.

Canadian GAAP has been interpreted to mean Canadian Accounting Standards for Not-for-Profit Organizations in Part III of the CPA Canada Handbook ("Not-for-Profit Standards").

(b) Financial instruments:

Financial instruments are recorded at fair value on initial recognition. Freestanding derivative instruments that are not in a qualifying hedging relationship and equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently recorded at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Trusts have elected to carry investments at fair value.

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs, which are amortized using the straight-line method.

2. Significant accounting policies (continued):

(b) Financial instruments (continued):

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indicators of impairment. If there is an indicator of impairment, the Trusts determine if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Trusts expect to realize by exercising rights to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(c) Cash and cash equivalents:

Cash and cash equivalents are comprised of cash on hand and short-term deposits with original maturities of three months or less.

(d) Revenue recognition:

The Trusts follow the deferral method of accounting for contributions. Unrestricted revenue is recognized when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. Funding received for specific purposes is deferred and recognized as revenue in the period in which the related expenses are incurred, or the restrictions are met.

(e) Income taxes:

The Trusts are non-taxable organizations under the Foreign Missions and International Organizations Act (1991).

(f) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate in effect at the transaction dates. Assets and liabilities denominated in foreign currency at the year-end date are translated to equivalent Canadian amounts at the exchange rate in effect at the year-end date. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenses.

2. Significant accounting policies (continued):

(g) Use of estimates:

The preparation of the combined financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the combined financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from these estimates.

(h) Contractual obligations:

Contractual obligations are funded in instalments and payments are due based on conditions included in the contract being satisfied. Expenses and liabilities are recognized in the combined financial statements as these conditions are met.

(i) Comparative information:

Certain comparative information has been reclassified to conform with this year's current financial statement presentation.

3. Investments:

Investments consist of mutual funds under the supervision of an investment manager and custodian and consist of the following managed funds:

	Northern Boundary	Southern Boundary	2015 Total	2014 Total
International Equity Fund	$ 27,759,148	$ 22,950,607	$ 50,709,755	$ 48,589,259
US Equity Fund	24,433,173	20,200,769	44,633,942	37,614,617
Global Equity Fund	22,065,191	18,242,978	40,308,169	36,980,948
Global Infrastructure	15,894,887	13,141,517	29,036,404	24,213,119
Canadian Bond	38,753,078	32,040,129	70,793,207	64,194,661
US Real Estate	16,788,067	13,879,977	30,668,044	23,681,987
	$ 145,693,544	$ 120,455,977	$ 266,149,521	$ 235,274,591

4. Contractual obligations:

The Trusts have entered into a number of project grant contracts as at March 31, 2015 for the future funding of research projects to be completed subsequent to the year end.

These contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. As such, no liability has been accrued in the financial statements as the Trusts are not liable until these conditions have been met.

The research project contractual obligations as at March 31, 2015 of Northern Boundary are $1,638,294 (2014 - $1,679,944) and of the Southern Boundary are $1,709,808 (2014 - $2,054,925).

5. Minimum fund balances:

In line with Chapter IX – 'Financial Regulations' Section F of the Pacific Salmon Commission By-laws, the total expenditures of the Trusts should not exceed the total income from the Principal. The Principal was the amount provided at the point of constitution of the Trusts and was US $74,837,400 from the Government of the United States of America and CAD $250,000 from the Government of Canada in the Northern Boundary and US $64,902,400 from the Government of the United States of America and CAD $250,000 from the Government of Canada in the Southern Boundary. As at March 31, 2015, the Northern and Southern Funds were in excess of the minimum balances.

6. Administrative services:

The Pacific Salmon Commission ("Commission") charges fees for administrative services to the Trusts representing an allocation of Commission salaries and benefits expenses incurred on behalf of the Trusts.

During the fiscal year ended March 31, 2015, the Trusts provided funding for projects totaling $706,804 (2014 - $2,133,619) to the Commission.

As at March 31, 2015, the Trusts have a payable to the Commission of $124,262 (2014 - $119,465).

7. Financial instruments:

(a) Market/currency risk:

The Fund is exposed to market and currency risk on its investments as a result of fluctuations in factors such as stock prices, interest rates, foreign exchange rates, and commodity prices. Management invests in a diverse investment portfolio, and engages a third party investment manager to mitigate the overall risk profile of its investments.

(b) Credit risk:

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. For cash and cash equivalents, accounts receivable, investments, and interest receivable, the Trusts' credit risk is limited to the carrying value on the statement of financial position. Management does not believe that the Trusts are subject to any significant concentration of credit risk.

(c) Liquidity risk:

Liquidity risk is the risk that an entity will not be able to meet its obligations associated with financial liabilities.

The Trusts manage liquidity risk by maintaining adequate cash and investment revenues. The Trusts monitor the cash flows in to ensure that the fund balances are maintained at a sufficient level in line with the Treaty.

Financial Statements

YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND (ADMINISTERED BY PACIFIC SALMON COMMISSION)

Year ended March 31, 2015

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INDEPENDENT AUDITORS' REPORT

To the Members of the Yukon River Panel

We have audited the accompanying financial statements of Yukon River Salmon Restoration and Enhancement Fund (Administered by Pacific Salmon Commission), which comprise the statement of financial position as at March 31, 2015, the statements of operations and fund balance and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information. The financial statements have been prepared by management in accordance with the financial reporting provisions of Appendix A of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the financial reporting provisions of Appendix A of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011; this includes determining that the basis of accounting is an acceptable basis for the preparation of these financial statements in the circumstances, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.
KPMG Canada provides services to KPMG LLP.

Opinion

In our opinion, the financial statements as at and for the year ended March 31, 2015 are prepared, in all material respects, in accordance with the financial reporting provisions of Appendix A of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011.

Basis of Accounting

Without modifying our opinion, we draw attention to note 2(a) of the financial statements, which describes the basis of accounting. The financial statements are prepared to assist the Yukon River Salmon Restoration and Enhancement Fund to meet the requirements of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011. As a result, the financial statements may not be suitable for other purposes.

Restriction on Use

Our report is intended solely for the Yukon River Panel, Pacific Salmon Commission, the Government of Canada and the Government of the United States of America and should not be used by parties other than the Yukon River Panel, Pacific Salmon Commission, the Government of Canada and the Government of the United States of America.

KPMG LLP

Chartered Professional Accountants

December 18, 2015
Vancouver, Canada

YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND (ADMINISTERED BY PACIFIC SALMON COMMISSION)

Statement of Financial Position
(Expressed in Canadian dollars)

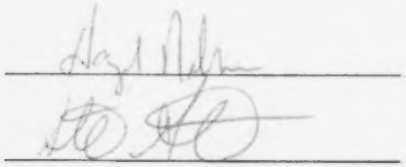
March 31, 2015, with comparative information for 2014

	2015	2014
Assets		
Current assets:		
Cash and cash equivalents	$ 2,420,154	$ 1,151,202
Accounts receivable	-	25,080
	$ 2,420,154	$ 1,176,282
Liabilities and Fund Balance		
Current liabilities:		
Accounts payable and accrued liabilities	$ 7,956	$ 4,154
Due to Pacific Salmon Commission (note 4)	6,706	522,462
Deferred revenue (note 5)	1,496,004	-
	1,510,666	526,616
Fund balance	909,488	649,666
	$ 2,420,154	$ 1,176,282

Contractual obligations (note 3)

See accompanying notes to financial statements.

Approved on behalf of the Yukon River Panel:



YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND (ADMINISTERED BY PACIFIC SALMON COMMISSION)

Statement of Operations and Fund Balance
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	2015	2014
Contributions from contracting party (note 6)	$ 1,308,360	$ 1,231,440
Interest income	842	525
	1,309,202	1,231,965
Expenses:		
Administrative services (note 4)	71,186	68,443
Travel and accommodation	7,823	4,382
Rents and communications	1,068	1,349
Contract services	21,065	11,232
Project grants	1,091,981	969,099
Materials and supplies	541	706
	1,193,664	1,055,211
Excess of revenue over expenses before undernoted	115,538	176,754
Foreign exchange gain	144,284	57,181
Excess of revenue over expenses	259,822	233,935
Fund balance, beginning of year	649,666	415,731
Fund balance, end of year	$ 909,488	$ 649,666

See accompanying notes to financial statements.

YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND (ADMINISTERED BY PACIFIC SALMON COMMISSION)

Statement of Cash Flows
(Expressed in Canadian dollars)

Year ended March 31, 2015, with comparative information for 2014

	2015	2014
Cash provided by (used in):		
Operations:		
Excess of revenue over expenses	$ 259,822	$ 233,935
Changes in non-cash operating working capital:		
Accounts receivable	25,080	(24,996)
Accounts payable and accrued liabilities	3,802	1,342
Deferred revenue	1,496,004	-
Due to Pacific Salmon Commission	(515,756)	515,352
Increase in cash and cash equivalents	1,268,952	725,633
Cash and cash equivalents, beginning of year	1,151,202	425,569
Cash and cash equivalents, end of year	$ 2,420,154	$ 1,151,202

See accompanying notes to financial statements.

YUKON RIVER SALMON RESTORATION AND ENHANCEMENT FUND (ADMINISTERED BY PACIFIC SALMON COMMISSION)

Notes to Financial Statements
(Tabular amounts expressed in Canadian dollars, unless otherwise noted)

Year ended March 31, 2015

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1. Nature of organization:

The Yukon River Salmon Restoration and Enhancement Fund (the "Fund") was established by the Yukon River Salmon Agreement of 2001 by the Government of the United States of America and the Government of Canada (the "Contracting Parties") to support efforts to increase understanding of the factors that affect Yukon River salmon health and abundance.

The Fund is governed by the Yukon River Panel (the "Panel") made up equally of six representatives from each of the Contracting Parties.

On April 1, 2011, the Panel entered into an agreement with the Pacific Salmon Commission ("the Commission") for the Commission to administer the Fund. As part of the agreement, the net assets as at March 31, 2011 are to be administered by the Department of Fisheries and Oceans ("DFO") to discharge future obligations related to project grants approved prior to the transfer of Fund administration to the Commission. Accordingly, the net assets as at March 31, 2011 are not included in these financial statements.

2. Significant accounting policies:

(a) Basis of presentation and accounting:

These financial statements have been prepared in accordance with the financial reporting provisions of Appendix A of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011. The financial reporting provisions of the Collaborative Agreement between the Yukon River Salmon Restoration and Enhancement Fund and the Pacific Salmon Commission effective from April 1, 2011 require the financial statements to be prepared in a manner consistent with generally accepted accounting principles ("GAAP") except that the statements only report the operating assets and liabilities of the Fund from April 1, 2011 in accordance to the timeframe when the fund has been administered by the Commission as determined in the Collaborative Agreement between the Fund and the Commission effective from April 1, 2011 through March 31, 2014, and subsequently extended to March 31, 2017.

Canadian GAAP has been interpreted to mean Canadian Accounting Standards for Not-for-Profit Organizations in Part III of the CPA Canada Handbook ("Not-for-Profit Standards").

2. Significant accounting policies (continued):

(b) Financial instruments:

Financial instruments are recorded at fair value on initial recognition. Freestanding derivative instruments that are not in a qualifying hedging relationship and equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently recorded at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Fund has not elected to carry any such financial instruments at fair value.

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs, which are amortized using the straight-line method.

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indicators of impairment. If there is an indicator of impairment, the Fund determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Fund expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(c) Cash and cash equivalents:

Cash and cash equivalents consist of cash and highly liquid investments with a term to maturity of three months or less at the date of purchase.

(d) Revenue recognition:

The Fund follows the deferral method of accounting for contributions. Unrestricted revenue is recognized when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. Funding received for specific purposes is deferred and recognized in the period in which the related expenses are incurred.

(e) Income taxes:

The Fund is a non-taxable organization under the Foreign Missions and International Organizations Act (1991).

2. Significant accounting policies (continued):

(f) Foreign exchange translation:

Transactions originating in foreign currencies are translated at the exchange rate in effect at the transaction dates. Assets and liabilities denominated in foreign currency at the year-end date are translated to equivalent Canadian amounts at the exchange rate in effect at the year-end date. Foreign exchange gains and losses resulting from translation are included in the determination of excess or deficiency of revenue over expenses.

(g) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from these estimates.

(h) Contractual obligations:

Contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. Expenses and liabilities are recognized in the financial statements as these conditions are met.

3. Contractual obligations:

The Fund has entered into a number of project grant contracts as at March 31, 2015 for the future funding of research projects to be completed subsequent to the year-end.

These contractual obligations are funded in installments and payments are due based on conditions included in the contract being satisfied. As such, no liability has been accrued in the financial statements as the Fund is not liable for these expenses until these conditions have been met.

The research project contractual obligation is $382,562 as at March 31, 2015 (2014 - $253,606).

4. Administrative services:

The Commission charges fees for administrative services to the Fund representing an allocation of Commission salaries and benefits expenses incurred on behalf of the Fund.

During the year, the Fund paid $71,186 (2014 - $68,443) to the Commission for administrative services. As at March 31, 2015, the Fund had a payable to the Commission of $ 6,706 (2014 - $522,462) which includes amounts originally transferred from the Yukon River Panel Society of nil (2014 - $515,569) and $6,706 (2014 - $6,893) represents March 2015 administration fees of $5,932 plus $774 for postage, stationery and travel costs to be a reimbursement for expenses paid by the Commission on behalf of the Fund.

5. Deferred revenue:

Deferred revenue consists of unspent funds provided by the Government of the United States of America that are reserved for future operating and capital expenditures of the Fund.

	2015	2014
Balance, beginning of year	$ -	$ -
Operating contributions received	1,496,004	-
Balance, end of year	$ 1,496,004	$ -

6. Related party:

The Fund is related to the Contracting Party due to the Contracting Party's ability to appoint representatives to the Panel. During the year, the Fund recognized operating contributions from the Government of the United States of America totaling $1,308,360 (2014 - $1,231,440).

7. Financial instruments:

(a) Credit risk:

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. For cash and cash equivalents and accounts receivable, the Fund's credit risk is limited to the carrying value on the statement of financial position. Management does not believe that the Fund is subject to any significant concentration of credit risk.

(b) Liquidity risk:

Liquidity risk is the risk that an entity will not be able to meet its obligations associated with financial liabilities.

The Fund manages liquidity risk by maintaining adequate cash balances. The Fund monitors the cash flows to ensure that the fund balances are maintained at a sufficient level in line with the operational requirements.

8. Economic dependence:

The Fund is dependent on the annual operating contribution provided by the Government of the United States of America.

Appendices

Appendix A

Northern Fund Projects for 2014/2015

Northern Fund 2014 Approved Project Proposals

	Description	Proponent	Org	Area **	CAN$	US$	Total US$
	Enhancement						
1	2014 Tatsamenie Lake Sockeye Fry Extended Rearing	Mercer	B.Mercer & Assoc	TBR	$ 41,968		$ -
2	Tahltan Lake Egg-take 2014	Collins	DFO	TBR	$ 40,000		$ -
3	Stikine Enhancement Feasibility Study	Erhardt	TAF	TBR	$ 95,086		$ -
4	Tuya smolt sampling	Frocklage	TAF	TBR	$ 13,015		$ -
5	King Salmon Lake - Sockeye enhancement project	Gordon	TRTF	TBR	$ 15,091		$ -
6	Tatsamenie Lake Smolt project	Mercer	B. Mercer & Assoc	TBR	$ 29,085		$ -
7	Kitimat River hatchery water chiller purchase and installation	Willis	DFO	NBC	$ 16,863		$ -
8	Indian River Intake Mechanical Cleaning System – Sitka Sound Science Center, SJ Hatchery	Garrison	SSSC	SEAK		$ 99,000	$ 99,000
9	Recovery Enhancement of Kitsumkalum Chinook	English	LGL Ltd	NBC	$ 95,000		$ -
	Habitat Restoration						
1	Lower Williams Creek Spawning Channel Feasibility	Miller	DFO	NBC	$ 35,000		$ -
2	Kleanza Creek Spawning Weirs - Feasibility Project	Drewes	Hidden River Environ.	NBC	$ 40,000		$ -
3	Tahltan Lake sockeye access improvement	Erhardt	TAF	TBR	$ 32,018		$ -
4	Predation of Juvenile Hanford Reach Upriver Brights in McNary Pool	McMichael	Pacific Northwest National Laboratory	NBC SEAK		$ 128,932	$ 128,932
5	Lower Williams Creek Spawning Channel Feasibility	Miller	DFO	NBC	$ 10,000		$ -
6	Kelsall River Salmon Habitat Assessment using a combination of on-the-ground fluvial habitat surveys and remote-sensed classification / delineation	Ryan	TWC	SEAK		$ 48,000	$ 48,000
	Improved Information						
1	Forecasting Southeast Alaska pink salmon harvest from juvenile salmon data: extension of models	Orsi	NOAA	SEAK		$ 49,760	$ 49,760
2	Northern Boundary Area Sockeye Salmon Genetic Stock Identification for 2014	Guyon	NOAA	SEAK		$ 171,150	$ 171,150
3	Stikine River Coded Wire Tagging Augmentation, 2014	Etherton	DFO	TBR	$ 72,400		$ -
4	Taku River Coho Salmon Escapement and Smolt Tagging Augmentation	Boyce	DFO	TBR	$ 98,375		$ -
5	Genetic changes associated with in-basin supplementation of a population of	Joyce	NOAA	SEAK		$ 40,000	$ 40,000
6	Stock composition of Stikine and Taku inriver fisheries - sample collection	Boyce	DFO	TBR	$ 47,900		$ -
7	Northern and Transboundary sockeye matched scale-tissue sampling	Reynolds	ADFG	SEAK		$ 188,596	$ 188,596
8	Genetic stock identification of District 106 and 108 sockeye, 2013	Gilk-Baumer	ADFG	SEAK		$ 114,150	$ 114,150
9	Genetic stock identification of District 111 sockeye, 2013	Gilk-Baumer	ADFG	SEAK		$ 43,320	$ 43,320
10	2014 Alsek Sockeye Run Reconstruction Using GSI	Waugh (Huebs	DFO	TBR	$ 12,800		$ -
11	McLoughlin Creek Enhanced Chum Assessment	Willis (Larsen)	DFO (HFN)	NBC	$ 26,770		$ -
12	Southeast Alaska Chinook Salmon Stock Assessment	Jones	ADFG	SEAK		$ 160,000	$ 160,000
13	Area 3 Wild Chum Assessment (Commercial fishery otoliths)	Davies	DFO	NBC	$ 73,310		$ -
14	Skeena Sockeye Lakes Juvenile Sockeye Hydroacoustic Surveys	Doire	SFC	NBC	$ 60,940		$ -
15	Sockeye Smolt Enumeration at Babine Lake	Gottesfeld (Doi	SFC	NBC	$ 151,475		$ -
16	Genetic Analyses of samples collected in Recreational Chinook Fisheries - Northern BC	Winther	DFO	NBC	$ 60,000		$ -
17	Genetic Stock ID of Chinook salmon caught in Northern BC Troll Fisheries 2014	Winther	DFO	NBC	$ 60,000		$ -
18	Evaluation of New Approaches to Estimate Ecstall Chum Escapement	Hawryshyn	NCFNSC	NBC	$ 54,855		$ -
19	Central BC Chinook Mark Incidence and Catch Estimation Project 2014	Koroluk	DFO	NBC	$ 9,000		$ -
20	Increased North migrating Chinook indicator stock CWT to improve Chinook stock analysis	Willis	DFO	NBC SEAK	$ 216,000		$ -
21	Zymacord River Coho out Harvest Distribution	Anderson	Northwest Watershed Enhancement Society	NBC	$ 5,500		$ -
22	Kitwanga River Salmon Enumeration Facility (KSEF) Upgrades	Kingston	GFA	NBC	$ 58,000		$ -
23	Fish Count Modernization at the Kitwanga River Smolt Enumeration Facility	Cleveland	GFA	NBC	$ 7,480		$ -
24	Kitwanga River Salmon Enumeration, 2014	Cleveland	GFA	NBC	$ 30,000		$ -
25	Sockeye Smolt Enumeration at Babine Lake – Hydroacoustic Feasibility	Doire	SFC	NBC	$ 16,233		$ -
26	Multi-species salmon assessment for the Wannock River	English	LGL Ltd	NBC	$ 12,500		$ -
27	Skeena River Recreational Chinook Creel Survey 2014	English	LGL Ltd	NBC	$ 146,000		$ -
28	Stock Composition of Stikine and Taku Inriver Fisheries	Etherton	DFO	TBR	$ 103,700		$ -
29	Slamgeesh Weir Sampling Infrastructure Improvements	Fernando	GWA	NBC	$ 10,821		$ -
30	Adapting benchmarks of biological status to variability in exploitation history and persistent changes in productivity with a focus on data-limited Conservation Units	Holt	DFO	NBC	$ 18,000		$ -
31	2014 Alsek Chinook Run Reconstruction Using GSI	Huebschwerler	DFO	TBR	$ 8,500		$ -
32	Atnarko River Chinook Escapement Estimation Project 2014	Koroluk	DFO	NBC	$ 80,000		$ -
33	Assessing fitness effects of sockeye salmon supplementation in Auke Creek, AK	McPhee	University of Alaska Fairbanks	SEAK		$ 161,848	$ 161,848
34	Refining & standardizing Naso area chum salmon stock assessment 2014	Stewart	NLG	NBC	$ 10,027		$ -
35	Alaska Department of Fish & Game Mark, Tag and Age Laboratory Support	Oxman	ADFG	SEAK		$ 62,700	$ 62,700
36	Electronic Data Collection from Marine Sport Fisheries in Southeast Alaska	Jaenicke	ADFG	SEAK		$ 150,000	$ 150,000
37	Northern Boundary area summer chum salmon monitoring	Piston	ADFG	SEAK		$ 32,376	$ 32,376
					2014 Total		**$ 1,449,832**

Area Glossary **	
Northern BC	NBC
Southeast Alaska	SEAK
Transboundary	TBR

Appendix B

Southern Fund Projects for 2014/2015

Southern Fund 2014 Approved Project Proposals

	Description	Proponent	Org	Area **	2014 Total CAN in Can$	2014 Total US in US$	2014 Total $ in US$
Goal 1 - Improve the Management of Fisheries Relevant to the Pacific Salmon Treaty							
1	Determining Optimum Coho Smolt Production and Spawner Abundance to Establish Benchmarks	Bocking	LGL	GB, FR	$ 44,900		$ -
2	Calibration of Assessment Methods for Fraser Sockeye Spawning Populations Between 25K-75K	Benner	DFO	FR	$ 75,240		$ -
3	Joint US and CA Mixed-Stock Chum Fisheries Sampling Design	Van Will	DFO	PS, SoBC	$ 75,000		$ -
4	Collection of DNA Based Stock Composition Data from the WCVI Chinook AABM Fishery	Kearey	DFO	WCVI	$ 75,000		$ -
5	Run size adjustments for Fraser sockeye salmon	Patterson	DFO	FR	$ 25,000		$ -
6	Estimating premature mortality of adult Harrison sockeye salmon	Patterson	DFO	FR	$ 75,000		$ -
7	Continuing the evaluation of abundance and stock composition of downstream migrating juvenile S	Whitehouse	DFO	FR	$ 129,732		$ -
8	What can Discovery Passage smolts tell us about returning Fraser River sockeye?	Latham	PSC	GB	$ 18,311		$ -
9	Qualark Acoustics: estimating daily salmon passage in the Fraser River near Yale, BC in 2014	Whitehouse	DFO	FR	$ 280,018		$ -
10	At-Sea Data Entry System for Salmon Fisheries – The last mile?	Lawson	NOAA	OR		$ 16,000	$ 16,000
11	Early marine residence timing and survival of Fraser River sockeye salmon in the Strait of Georgia	Neville	DFO	GB	$ 90,000		$ -
12	Effects of early marine growth on adult Fraser sockeye salmon returns	Godbut	DFO	FR	$ 38,000		$ -
13	Burman River Chinook salmon mark-recapture 2014	Dunlop	NTC	WCVI	$ 98,807		$ -
14	Coho CWT sampling program hand- held equipment replacement	Fraser	DFO	SoBC	$ 46,500		$ -
15	Southern BC and Puget Sound chum salmon microsatellite baseline	Beacham	DFO	SoBC, PS	$ 90,000		$ -
16	Genotyping of coho salmon by direct amplicon sequencing	Beacham	DFO	SoBC, PS	$ 65,000		$ -
17	Chum Salmon Southern Area Genetic Baseline Enhancement Part 2: Expanded SNP Collection	Warheit	WDFW	PNW		$ 100,000	$ 100,000
18	Nootka Sound Chinook salmon terminal return ratio estimator feasibility study	Dunlop	NTC	WCVI	$ 4,994		$ -
19	*WITHDRAWN Adapting benchmarks of biological status to variability in exploitation history and*	*Holt*	*DFO*	*SoBC*	$ -		$ -
20	Revisiting The Future of the Coded Wire Tag Recovery Program: A Proposed Workshop/Expert P	Hankin	CSC	PNW		$ 100,000	$ 100,000
Goal 2 - Address Priority Stocks of Interest							
1	South Fork Nooksack Chinook captive brood implementation	Eleazer	WDFW	PS		$ 88,346	$ 88,346
2	South Fork Nooksack River Larson's Phase 2 Restoration	Komoto	LIBC	PS		$ 75,000	$ 75,000
3	Sockeye Stock Composition Comparison of Area 4B/5 Versus Area 20	Leon	MFM	JDF	$ 21,738		$ -
4	Cowichan River - Broadway Run Slope Stability Remediation	Wightman	BCCF	GB	$ 50,000		$ -
5	Cowichan juvenile Chinook habitat use assessment to direct lower river & estuary rehabilitation	Craig	BCCF	GB	$ 32,045		$ -
6	Breaching the Westcan Causeway in Cowichan Bay to re-connect the Koksilah with the Cowichar	Schuerholz	CERCA	GB	$ 102,644		$ -
7	Interactions of Wild and Enhanced Chinook Salmon in Unenhanced WCVI River Systems	Withler	DFO	WCVI	$ 136,900		$ -
Goal 3 - Improve Collaboration Between the Parties, Relevant Agencies and Stakeholders							
1	Making our salmon research and management more broadly accessible	Latham	PSC	FR	$ 19,949		$ -
Goal 4 - Gain Better Understanding and Incorporate Ecosystem Factors into Underlying Science and Management Processes							
1	Assessing growth of juvenile salmon in the Strait of Georgia	Beckman	NOAA	GB		$ 57,885	$ 57,885
2	Survival Analysis of Fraser River Sockeye - a Cumulative Impacts Model-Based Approach	Irvine	DFO	FR	$ 62,000		$ -
3	Migration timing of juvenile Fraser River sockeye in Johnstone Strait	Trudel	DFO	GB	$ 139,000		$ -
4	The role of increasing sea lion predation on ocean survival and productivity of salmon in the South	Olesiuk	Consultant	PNW	$ 12,000		$ -
5	Freshwater nursery ecosystem linkages to juvenile Fraser River sockeye salmon condition: Explo	Selbie	DFO	FR	$ 65,138		$ -
6	A spatially-explicit ecosystem model for quantifying marine mammal impacts on Chinook salmon	Kaplan	NOAA	PNW		$ 70,000	$ 70,000
						Total expenditures in US $	**$ 507,231**

Area Glossary **

Columbia River watershed	CR
Fraser River watershed	FR
Geogia Basin	GB
Juan de Fuca Strait	JDF
Oregon	OR
Pacific Northwest (all SEF	PNW
Puget Sound	PS
Southern BC	SoBC
Washington Coast	WC
West Coast Vancouver Isla	WCVI

Appendix C

Appointment of Officers for 2014/2015

Effective December 1, 2014 a new slate of officers for the Pacific Salmon Commission was identified as follows:

OFFICE	COUNTRY	REPRESENTATIVE
Commission Chair	Can	Susan Farlinger
Commission Vice-Chair	U.S.	W. Ron Allen
Fraser River Panel Chair	Can	Jennifer Nener
Fraser River Panel Vice-Chair	U.S.	Kyle Adicks
Northern Panel Chair	Can	Mel Kotyk
Northern Panel Vice-Chair	U.S.	Lowell Fair
Southern Panel Chair	Can	Andrew Thomson
Southern Panel Vice-Chair	U.S.	Laurie Peterson
Transboundary Panel Chair	Can	Steve Gotch
Transboundary Panel Vice-Chair	U.S.	John Clark
Stan. Comm. on F&A - Chair	Can	Rebecca Reid
Stan. Comm. on F&A - Vice-Chair	U.S.	W. Ron Allen
Stan. Comm. on Scientific Cooperation - Chair	Can.	Carmel Lowe
Stan. Comm. on Scientific Cooperation - Vice-Chair	U.S.	David Hankin
Technical Committee on Data Sharing - Co-Chair	Can	Chuck Parken until November, then Kathy Fraser
Technical Committee on Data Sharing - Co-Chair	U.S.	George Nandor
Fraser River Panel Technical Committee - Co-Chair	Can	Ann-Marie Huang
Fraser River Panel Technical Committee - Co-Chair	U.S.	Gary Graves
Northern Boundary Technical Committee - Co-Chair	Can	David Peacock
Northern Boundary Technical Committee - Co-Chair	U.S.	Andrew Piston
Transboundary Technical Committee - Co-Chair	Can	Steve Smith
Transboundary Technical Committee - Co-Chair	U.S.	Edgar Jones
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	Can	Sean Collins
Enhancement Subcommittee of the Transboundary Technical Committee - Co-Chair	U.S.	Ron Josephson
Joint Chinook Interface Group Co-Chair	Can.	Paul Sprout
Joint Chinook Interface Group Co-Chair	U.S.	Stefanie Moreland
Joint Technical Committee on Chinook - Co-Chair	Can	Gayle Brown
Joint Technical Committee on Chinook - Co-Chair	U.S.	John Carlile
Joint Technical Committee on Coho - Co-Chair	Can	Arlene Tompkins
Joint Technical Committee on Coho - Co-Chair	U.S.	Gary Morishima
Joint Technical Committee on Chum - Co-Chair	Can	Pieter van Will
Joint Technical Committee on Chum - Co-Chair	U.S.	Jay Zischke
Joint Technical Committee on Habitat and Restoration Co-Chair	Can.	TBD
Joint Technical Committee on Habitat and Restoration Co-Chair	U.S.	Thom Hooper
Selective Fishery Evaluation Committee - Co-Chair	Can	Rob Houtman
Selective Fishery Evaluation Committee - Co-Chair	U.S.	Gary Morishima

Appendix D

Approved Budget FY 2015/2016

PACIFIC SALMON COMMISSION

APPROVED BUDGET 2015/2016

		February 2014
1	INCOME	
A.	Contribution from Canada	$1,879,636
B.	Contribution from U.S.	$1,879,636
	Sub total	$3,759,272
C.	Carry-over from 2014/2015	$147,121
D.	Interest	$22,008
E.	Other income	$166,900
F.	Total Income	$4,093,301
2	EXPENDITURES	
A.	1. Permanent Salaries and Benefits	$2,805,949
	2. Temporary Salaries and Benefits	$249,622
	3. Total Salaries and Benefits	$3,055,571
B.	Travel	$89,459
C.	Rents, Communications, Utilities	$109,944
D.	Printing and Publications	$9,000
E.	Contractual Services	$689,196
F.	Supplies and Materials	$40,882
		$938,481
G.	Equipment	$99,248
H.	Total Expenditures	$4,093,301
3	BALANCE (DEFICIT)	$0

Appendix E

Pacific Salmon Commission Secretariat Staff as of March 31, 2015

EXECUTIVE OFFICE

John Field
Executive Secretary

Teri Tarita
Records Administrator/Librarian

Kimberly Bartlett
Meeting Planner

Clare Rochfort
Administrative Assistant

Sandie Gibson
Information Technology Manager

FINANCE & ADMINISTRATION

Ilinca Manisali
Controller

Angus Mackay
Manager, Restoration & Enhancement Funds

Bonnie Dalziel
Accountant

Victor Keong
Program Assistant, Restoration & Enhancement Funds

Witty Lam
Accounting Assistant

FISHERY MANAGEMENT

Mike Lapointe
Chief Biologist

Catherine Michielsens
Quantitative Scientist

Catherine Ball
Scale Lab Assistant

Merran Hague
Quantitative Biologist

Jim Cave
Head, Stock Monitoring Group

Ian Guthrie
Head, Stock Identification Group

Keith Forrest
Test Fishing Biologist

Steve Latham
Stock Identification Biologist, Sockeye

Yunbo Xie
Hydroacoustics Scientist

Bruce White
Stock Identification Biologist, Pinks

Fiona Martens
Senior Hydroacoustic Technician

Erica Jenkins
Salmon Technician

Jacqueline Nelitz
Hydroacoustic Technician

Maxine Forrest
Senior Scale Analyst

Mike Bartel-Sawatzky
Hydroacoustic Technician

Julie Sellars
Assistant Scale Analyst

Appendix F

Membership Lists for Standing Committees, Panels, Joint Technical Committees and other Appointments as of March 31, 2015

1. STANDING COMMITTEE ON FINANCE AND ADMINISTRATION

Ms. Rebecca Reid (Chair)
Mr. Randy Atwal
Ms. Kate Ladell
Mr. Johnathan Terkel

Mr. W. Ron Allen (Vice-Chair)
Ms. Alison Agness
Mr. William F. Auger
Mr. Mike Clark
Ms. Natalie Howard
Mr. Mike Matylewich

Staff

Mr. John Field (ex. Officio)

Editorial Board

Ms. Kate Ladell

Ms. Alison Agness

Staff

Mr. John Field (ex. Officio)

2. FRASER PANEL

Ms. Jennifer Nener (Chair)
Mr. Chris Ashton
Mr. Mike Griswold
Chief Ken Malloway
Mr. Rob Morley
Mr. John Murray

Ms. Lorraine Loomis (Vice-Chair)
Mr. Kyle Adicks
Mr. Robert F. Kehoe
Mr. Tim Tynan

FRASER RIVER PANEL - ALTERNATES

Mr. Les Jantz
Mr. Brent McCallum
Mr. Tony Roberts Jr.
Mr. Les Rombough
Mr. Peter Sakich
Mr. Marcel Shepert

Mr. Ronald G. Charles
Mr. Kirt Hughes
Mr. Jack R. Giard
Ms. Peggy Mundy

3. SOUTHERN PANEL

Mr. Andrew Thomson (Chair)
Dr. Don Hall
Mr. Paul Kershaw
Mr. John Legate
Mr. Jeremy Maynard
Mr. Laurie Milligan

Ms. Laurie Peterson (Vice-Chair)
Ms. Susan Bishop
Mr. Burnie Bohn
Mr. Mark Newell
Mr. Joseph Oatman
Mr. Terry R. Williams

SOUTHERN PANEL - ALTERNATES

Mr. Rod Cootes
Ms. Brigid Payne
Mr. Errol Sam
Ms. Marilyn Scanlan
Mr. Gord Sterritt
Mr. Phil Young

Mr. Larry Carpenter
Ms. Denise Hawkins
Mr. Edward Johnstone
Mr. Chris Kern
Mr. Joseph C. Peters
Mr. Ron Warren

4. NORTHERN PANEL

Mr. Mel Kotyk (Chair)
Mr. Chris Cue
Mr. Bill de Greef
Mr. Seigi Kriegl
Mr. Tom Protheroe
Ms. Joy Thorkelson

Mr. Lowell Fair (Vice-Chair)
Mr. Clay Bezenek
Mr. Robert D. Mecum
Mr. Howard Pendell
Mr. Russell Thomas
Mr. Robert M. Thorstenson

NORTHERN PANEL - ALTERNATES

Mr. Stuart Barnes
Mr. Ronald (George) Cuthbert
Ms. Sandra Davies
Mr. Rick Haugan
Mr. Greg Knox
Chief Harry Nyce Sr.

Mr. John Carle
Mr. Brennon Eagle
Mr. Mitchell Eide
Mr. Brian Frenette
Dr. Peter Hagen
Mr. Dennis Longstreth

5. TRANSBOUNDARY PANEL

Mr. Steve Gotch (Chair)
Ms. Cheri Frocklage
Mr. Keith Carlick
Ms. Jennifer Gould
Mr. Chris Kendel
Mr. Wolfe Riedl
Ms. Linaya Workman

Dr. John H. Clark (Vice-Chair)
Mr. James Becker
Mr. Rod Brown
Mr. Arnold Enge
Mr. Gary Gray
Dr. Peter Hagen
Ms. Dale A. Kelley

6. STANDING COMMITTEE ON SCIENTIFIC COOPERATION

Dr. Carmel Lowe (Chair)
Mr. Mark Saunders
Dr. David Hankin (Vice-Chair)
Mr. Alex Wertheimer

7. NORTHERN FUND COMMITTEE

Mr. Steve Gotch (Co-Chair)
Mr. John McCulloch
Mr. Tom Protheroe
Mr. Charles Swanton (Co-Chair)
Mr. William F. Auger
Mr. Robert Mecum

8. SOUTHERN FUND COMMITTEE

Mr. Andrew Thomson (Co-Chair)
Dr. Don Hall
Mr. Mike Griswold
Mr. Larry Peck (Co-Chair)
Mr. Peter Dygert
Mr. Joseph Oatman

9. JOINT TECHNICAL COMMITTEE ON CHINOOK

Dr. Gayle Brown (Co-Chair)
Mr. Richard Bailey
Ms. Sabrina Crowley
Ms. Diana Dobson
Ms. Dawn Lewis
Mr. Chuck Parken
Dr. Teresa Ryan
Dr. Antonio Velez-Espino
Mr. Ivan Winther
Mr. John Carlile (Co-Chair)
Dr. Marianna Alexandersdottir
Dr. John H. Clark
Mr. Robert Clark
Mr. Ethan Clemons
Mr. Tim Dalton
Mr. Brian Elliott
Ms. Danielle Evenson
Mr. Gary R. Freitag
Mr. Andrew Gray
Mr. Edgar Jones
Dr. Robert Kope
Mr. Larrie LaVoy
Ms. Marianne McClure
Mr. Peter McHugh
Mr. Scott McPherson
Dr. Gary S. Morishima
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